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ABSTRACT

To identify major information exchange problems experienced by program administrators, describe and graphically model a representative postsecondary system, and recommend organizational and procedural changes, interviews were held with the president or program administrators in 50 institutions operated under the North Carolina Department of Community Colleges. The interview questionnaire sought information on dissemination activities, job placement and followup inquiries, area economic data, use of secondary data sources, collection of planning information, advisory committees, and development of capabilities for program-related research and centralized information management. It was concluded that growth in overall enrollment has been indicative of effective dissemination of program information. The level and diversity of program activity supports an opinion that accomplishments may be substantial. However, periodic evaluations have been made largely in terms of program characteristics, and they provide an inadequate basis for estimating the extent to which programs have contributed to closing gaps between manpower needs and outputs. Several recommendations are included. (Author/SB)

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A STUDY OF OCCUPATIONAL INFORMATION EXCHANGE SYSTEMS IN NORTH CAROLINA POSTSECONDARY INSTITUTIONS

JOSEPH C. MATTHEWS, JR.
Department of Economics
North Carolina State University at Raleigh

Center Research and Development Report No. 8

CENTER FOR OCCUPATIONAL EDUCATION
NORTH CAROLINA STATE UNIVERSITY AT RALEIGH
1970

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION—BUREAU OF RESEARCH
DIVISION OF COMPREHENSIVE AND VOCATIONAL EDUCATION RESEARCH
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Dr. John K. Coster, Director
Center for Occupational Education
North Carolina State University at Raleigh
1 Maiden Lane
Raleigh, North Carolina 27607

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Joseph C. Matthews, Jr.

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CENTER RESEARCH AND DEVELOPMENT REPORT NO. 8

CENTER FOR OCCUPATIONAL EDUCATION

North Carolina State University at Raleigh

1970

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Contract No. OE 5-85-107

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PREFACE

One of the Center for Occupational Education's goals for the improvement of occupational education is the development and implementation of comprehensive postsecondary programs. No single aspect of this effort is more critical or continuing than that of information management, which includes the acquisition of essential planning information, the dissemination of program information, and a follow-up of results to provide sound bases for evaluation and redirection, both at the program and institutional levels.

This report examines the results of a first-hand survey of information management organization and problems in 50 technical institutes and community colleges in the North Carolina Community College System. The report presents both operational and conceptual models of information exchange systems, and provides recommendations which may be of material assistance to administrators in program organization and direction.

The Center wishes to thank Dr. Joseph C. Matthews, Jr. who completed the study, and the following members of the panel who provided pre-publication reviews of the report:

Dr. Charles V. Mercer, Associate Professor of Sociology and Anthropology
Dr. Charles H. Rogers, Associate Professor of Agricultural Education
Dr. Charles F. Ward, Assistant Professor, Division of Occupational Education
Dr. Robert T. Williams, Assistant Professor of Industrial and Technical Education

The Center also acknowledges the contributions of Mrs. Susan Humphrey and Mr. W. L. Ballenger, who assisted in the preparation of illustrations for the report; Mr. J. K. Dane, staff editor; Miss Pam Bennington, who prepared the final manuscript; and Mrs. Sue Mills who was responsible for the reproduction of the report.

John K. Coster
Director

ABSTRACT

The ultimate goal of this study is to improve information exchange systems in occupational programs by facilitating the flow, acquisition, management, and analysis of socio-economic data required for effective curriculum planning and evaluation. Main study objectives were (1) to identify major information exchange problems experienced by program administrators; (2) to describe and graphically model a representative system as found in post-secondary institutions; and (3) to recommend appropriate organizational and procedural changes.

One difficult aspect of information management is the assembly and interpretation of demographic and economic information for the area served, particularly occupational outlook data. Institutions rarely receive tailor-made planning advice from other agencies or from employers, nor do they have personnel assigned primarily to collect, organize and analyze such data, or to serve solely as planners. All of these functions must be performed by staff and faculty members who have other administrative and teaching duties. Thus, various linkages and procedures for information management have been developed locally into informal systems which reflect the initiative, experience, working needs, and interests of individuals, firms and agencies involved.

The study examined occupational information exchange matters in 50 institutions operated under the North Carolina Department of Community Colleges. All institutions were visited and interviews were held with the President or with program administrators, including Directors of Student Personnel, Directors of Vocational and Technical Departments, and other staff members. Interview results are presented and discussed under subheadings of dissemination activities; job placement and follow-up inquiries; area economic information; use of secondary data sources; collection of planning information; advisory committees; development of capabilities for program-related research and centralized information management within institutions; and a general discussion devoted to concomitants of curriculum evaluation and relationships of the several programs which constitute the occupational education spectrum.

It was concluded that growth in overall enrollment has been noteworthy and indicative of effective dissemination of program information. Occupational training objectives have been loosely stated and seldom quantified with respect to projected demands of area economies or occupationally directed needs and aspirations of service area populations. The level and diversity of program activity supports an opinion that accomplishments may be substantial, but periodic evaluations have been made largely in terms of program characteristics, and they provide an inadequate basis for estimating the extent to which programs have contributed to closing gaps between manpower needs and outputs.

Recommendations were made to establish a state-level occupational research and information management division within the Department of

Community Colleges. At institutional levels, it was recommended (1) to place continued emphasis on dissemination of program information, including forthright recruiting of potential students; (2) to revitalize and standardize procedures for follow-up of graduates and dropouts, in order to provide feedbacks for program evaluation and redirection; (3) to give more attention to the broad planning leads to be found in area economic base information and trends, with special reference to use of 1970 Census data; (4) to redouble efforts to effect more productive cooperation with employment service and other local and area agencies which collect relevant data on human resources and employment; (5) to have maximum practicable participation of staff and faculty in surveys and planned visits to employers and other information sources; (6) to establish a more formal and specialized research and information management center in each institution; (7) to make the great potentials of electronic processing and retrieval available to all institutions; and (8) to make provisions for specialized inservice training and graduate study for all staff and faculty who occupy key positions information exchange, to enable them to know and use all available information sources.

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INTRODUCTION

This is a study of the management of economic and social information required to plan, execute and evaluate public occupational education programs in post-secondary institutions. Inquiry is focused at institutional levels because obtaining timely and realistic information specifically applicable to the area served by a technical institute or community college is a basic problem. Likewise, dissemination is an important consideration, for each institution has a considerable number of firms and agencies and large numbers of individuals to whom it must provide information concerning its programs.

A group of components that function cooperatively for a specific purpose may be termed a system. In this inquiry, an information system is the complex of individuals, organizational groupings and processes that interact to exchange information pertinent to occupational programs in post-secondary schools.

Some further definitions are in order, but it is neither feasible nor desirable to adopt narrow definitions for some of the terms employed. Occupational education for example, is conceived by some as encompassing "all education contributing to occupational choice, competence and advancement" (Hamlin, 1967). In this study the term "occupational education" will be used principally in reference to full-time vocational or technical curricula, and special or extension courses expressly designed to provide training in a recognized skill.

Management of information in this context may be considered as involving organization, strategies, and procedures through which relevant data are collected, exchanged, analyzed and utilized in program planning, decision making and appraisal. It also includes dissemination of information intended to favorably influence student enrollment, cooperation of employers, and public awareness as to the nature and benefits of occupational education.

Administrators of post-secondary occupational education have experienced much difficulty in obtaining timely and realistic economic and social information that is expressly applicable to the area and clientele served by their institutions. These data are essential for justifying, planning and evaluating local programs.

In the proposed Targeted Program in Development and Related Research, The National Center for Education Development and Research (CER) of the U. S. Office of Education, full cognizance has been given to the importance of manpower and job information in connection with occupational education. In that program, Manpower and Job Information heads the list of "research and development problem areas," and the first objective is "to develop models for using educationally relevant labor market, demographic, and manpower information for efficiently allocating vocational education resources..."

This problem is stated in some detail in the CER program draft:

> School administrators lack access to labor market, demographic and manpower data in a form which they can use to determine the nature of current and future employment opportunities suitable for their students. Consequently, they do not know which vocational programs should be made available. Moreover, personnel responsible for the development of instructional materials and practices lack sufficient knowledge about changing job content, skill requirements and employer specifications to design appropriate curricula and other vocational instructional materials. Similarly, vocational guidance personnel need much more reliable and appropriate information on occupational demand, required competencies, working conditions, and other labor market and manpower data for proper student career decision-making. In addition all these populations: administrators, curriculum specialists, and counselors lack appropriate systems for using vocational data when it is available.

The CER program draft further documents the problem in its statement of goals:

> General Goals
>
> The President's 1969 and 1970 Manpower Reports to Congress emphasized that vocational education programs must be geared to job market requirements. The 1970 report specifically called for a system of "labor market information adaptable to the needs of various users, including educational officials responsible for planning or for vocational guidance." To achieve this mandate, our research program is designed to identify the most effective and efficient procedures by refining existing ones and/or developing new procedures, collecting and retrieving educationally relevant labor market, demographic, and manpower data for selection, analysis and presentation. Such information is critically needed for (1) allocation of vocational education resources, (2) development of guidance programs and practices. More specialized procedures, to be available by 1975, will be directed toward the particular needs of different user audiences (administrators, curriculum specialists, counselors, etc.) in using the collected data.

The study with which this report is concerned was conceived and partly executed nearly a year before the CER program was announced, but the local problems of information exchange have not been diminished. If anything, they have been intensified due to establishment of new institutions, realignment of service areas and increasingly clouded outlook regarding occupational demands. Rising unemployment and slowing of economic activity in response to anti-inflationary measures, high cost of investment funds, and uncertainty as to effects of war-related adjustments on labor supply and demand are facts which occupational planners now must face.

Discussion.

In post-secondary institutions, planning tasks are more difficult

than in the elementary and secondary field. In the lower grades, the general education subjects are offered to virtually captive student populations. Although vocational courses are offered in high schools to help prepare students for early entry into employment, they do not equip workers with high levels of skill.

In contrast, at post-secondary levels, occupational education programs constitute the main effort and must be more specific both as to the nature and level of skills and as to numbers of workers being prepared. Objectives are predicated in part upon demonstrated or foreseeable demands of nearby labor markets or even upon needs of individual firms or governmental units; in part upon occupational outlook for the state and national economies; and in part upon availability, qualifications and interests of students, the great majority of whom have recently been enrolled in high schools.

Information pertinent to occupational programs may be classified and tabulated according to its content, source, functional use and in many other ways. Labor force and labor market data and projections are especially important in representing the supply and demand for workers with recognized skills. Other essential planning information includes numbers of prospective students, their interests, work experience and educational achievements. Assembly and analysis of all these kinds of data must be undertaken in formulating realistic program objectives.

New institutions, lacking information based upon local experience with post-secondary programs, may have great difficulty in setting specific, realistic objectives. They usually are forced initially to pursue limited and flexible goals, adjusting and expanding as employer needs and student interests become more apparent. There are nearly 150 occupational curricula for which fairly well standardized instructional outlines and materials have been developed, but only a small proportion of these curricula can be conducted simultaneously in any one institution.

Essential planning information must be acquired from many sources, including official and readily available social and economic data such as census statistics, but up-to-date information necessitates contacts with agencies which collect and report similar data. Perhaps the most difficult aspects are encountered when first hand information is sought from firms which may eventually provide employment for the students to be trained. Prospective students also must be provided with program information, and contacted in order that estimates may be made as to their participation in every curriculum proposed. Individual attention must be given to student inquiries and applications, and the institution's curriculum offerings should be designed to serve the needs of both industries and students.

When programs become operational, information is generated upon which to appraise their progress. As students drop out or graduate and are employed, data may be assembled that can be used to indicate how the human outputs, --workers who have acquired certain occupational qualifications, --are contributing to economic activity and growth. By whatever

names these appraisals are called, the process is one of evaluation, and conclusions cannot be drawn concerning the magnitude of gaps between objectives and results unless both are stated concretely.

Collection and development of this information involves acquisition of primary and secondary data and a circular process of dissemination and feedbacks which leads to determination of objectives and revision of data benchmarks. Analysis, planning and decision and decision making are practically continuous. Especially, it is desirable that institutional organization for information management be geared to utilize all available personnel in these survey and planning processes, and that it be done in a way that will not interfere with instruction or routine administration.

Institutions usually do not have any personnel who are assigned primarily to collect data, or to organize or analyze it, or to serve solely as planners. All of these functions, plus those involving public relations and dissemination of program information, are distributed among the staff and faculty members who are most directly concerned with related operational aspects, including both administration and instruction. As a result, various systems for information exchange and management have developed locally, partly through discharge of assigned position responsibilities and partly through individual initiative and acceptance of tasks necessary for effective staff and interagency cooperation under existing conditions.

Objectives

The scope of this study and the inherent possibilities for directing inquiry into many theoretical, quantitative and peculiarly local aspects of "information exchange" make it desirable that the objectives be clearly defined and selected so that attainment will establish bases for pursuing related exemplary programs.

It is believed that only three main objectives need be specified; as follows:

1. To identify the principal problems involved in securing, analyzing and otherwise managing the exchange and use of this information;

2. To describe and prepare a representative model of the systems in the institutions for obtaining, processing, using and disseminating economic and social information pertaining to occupational education programs (specifically, but not exclusively, the full-time technical and vocational curricula); and

3. To analyze responses to interview questions and to draw conclusions as to desirable adjustments in information management procedures, including the feasibility of establishing specialized divisions or centers within institutions.

An implied objective, which will become more obvious when design

and study procedures are noted, is to utilize data collection interviews for discussing local information management procedures and problems with the institution presidents and program administrators. This permits exploitation of opportunities for comparing alternative procedures and for presenting suggestions deemed worthy of consideration for trial or adoption. Other aims are utilization of final results for conducting dissemination conferences and in developing proposals for appropriate exemplary projects.

It should be noted especially that the scope of the objectives does not include analysis of economic conditions for the State or for the service area of any particular institution. However, each institution operates in a distinctive setting, and discussion of its pertinent economic or other environmental influences will not be avoided.

Development, Design and Method

In developing the study proposal and instruments for obtaining data, presidents and program directors in six technical institutes were contacted and asked to discuss processes and problems involved in securing and using labor market information. Organization charts, historical and descriptive materials, report forms, policy statements, relevant statutes, research reports and cooperative agreements concerning information exchange were examined. Advice and opinions were sought and obtained from several staff members in the Department of Community Colleges, other agencies, including state and local Employment Security Commission offices, and research associates representing several disciplines.

From these materials and advice, a graphical model representing principal kinds of organizational elements and information flows in the North Carolina Community College system was prepared and is discussed in a separate chapter. A separate chapter also is employed to present the conceptual homework of the study by indicating the connections between the information flow model, the conceptual models, and the structure of the interview questions. An interview guide was developed to pose questions relating to organization, procedures and problems involved in exchange of occupational program information in institutions. After clearance by the U. S. Office of Education, this interview guide with cover letter was mailed to Presidents in all technical institutes and community colleges in the State.

The main subject areas to which questions were addressed include dissemination of programs information; activities of the Director of Student Personnel and counselors; economic studies of the institution's service area; analysis and use of data obtained from the ESC; institutional policies and procedures regarding collection of demand and supply data; orientation of the program with respect to area industries and occupations; job placement and follow-up of graduates; operation of advisory committees; feasibility of centralizing some information exchange activities; and identification and discussion of specific problems.

Selection of the topics for interviews and preparation of questions

for the interview guide proved to be one of the most difficult tasks in developing the study. There is no assurance that these are the "right" questions, but efforts were made to cover the essential matters of local information management, and to give ample opportunity for expression by the program administrators who were interviewed.

All of the 50 institutions in the N. C. Department of Community Colleges were visited. In about one-half of these institutions, the investigator personally recorded responses to questions in the interview guide. In the remainder, questionnaires had been executed and returned before visits were made to the institutions, and the interview served to clarify and broaden the responses. In a few instances, the President was the only person interviewed, but he was not present in several cases and the Dean or Director of Student Personnel and the Dean of Instruction or Director of Vocational and Technical Education responded to questions applicable to their respective position assignments. Informal discussions also were held with many other staff and faculty members.

From the stated objectives and nature of the interview questions, it should be apparent that the study is focused upon procedures and attendant problems. Statistical data were not requested, except for a few approximations to indicate the extent to which certain operations were conducted. Respondents did, however, voluntarily present and discuss many types of data and reports to illustrate economic conditions, operational experiences and to support their views and conclusions. These data were too diverse to be treated systematically in the study, but often were appropriate in supporting an administrator's positions in regards procedures and problems under discussion.

In the chapter on interviews, each main topic is divided into "Results" and "Discussion". Responses are reported as factually as practicable under "Results" by stating numbers or percentages of respondents who followed certain procedures, or who advocated stated positions in regards various aspects of information management. The "Discussion" sections are used freely for explaining responses, airing opinions, and drawing conclusions. These conclusions are not reiterated in detail in the summary, but form the basis from which the specific recommendations are made.

A separate chapter is devoted to briefly describing the North Carolina Department of Community Colleges. This system of area schools was examined because these 50 institutions could be contacted conveniently; because several types of area economies are concerned; and because institutions are found in various stages of development and growth. Basic organization among institutions is quite similar, but program commitments are varied because of the nature of their principal service areas. In a few cases, there are nearby urban-industrial complexes which provide many opportunities for skilled workers, but several institutions are located in largely rural areas which continue to experience net outmigration, and where location and growth of industry is a pressing need.

Technical and vocational curricula are emphasized because full time

enrollment equivalents are greater than in any other program, and because graduates in these curricula contribute most directly to filling urgent demands in the skilled and sub-professional occupations. However, several major programs are conducted, ranging from adult basic education in all institutions to college parallel programs in the community colleges. All of these programs necessitate collection and dissemination of information by an institution, and several times more individuals are always concerned, than those who may be expected to participate as students in full-time occupational programs.

Review of Literature

A bibliography is included of principal publications examined in the course of the study. A detailed review of this literature is not presented, but reference is made to the following works, which pertain directly to programs conducted in the North Carolina post-secondary institutions.

Parry (1968) conducted an investigation of curriculum cost differentials, which should be of value in implementing a planning-programming-budgeting system. He also noted that there is a dire need for research to determine the quality of programs and of the product--the graduates.

Williams (1969) made the first comprehensive study of statistics on enrollment and completion of students in occupational curricula in the N. C. Community College system, along with data on students in selected vocational education courses in the state's secondary schools. He found that a lack of follow-up studies usually prevented making quantitative evaluations of the effects of occupational programs.

However, Lineberger (1968) conducted a comprehensive follow-up of vocational and technical division graduates in one technical institute, and was able to secure returns from as many as 87 percent of the graduates in some curricula.

Bolick (1969) analyzed the characteristics of students enrolled in the N. C. Community College system.

THE NORTH CAROLINA DEPARTMENT OF COMMUNITY COLLEGES

In 1957 the North Carolina General Assembly made limited funds available to the State Board of Education for initiating a statewide system of industrial education centers, which would be area schools "dedicated to extending educational opportunities in industry, business and agriculture beyond the high school, thus providing a better trained manpower in the State." By 1959, this program had become operational under the Division of Vocational Education, North Carolina Department of Public Instruction.

Also in 1957 the "Community College Act" was enacted by the General Assembly, but control of the five institutions then classified as community colleges was retained by the Board of Higher Education. In 1963 two community colleges and about 20 industrial education centers in various stages of development were brought under control of a reorganized Department of Community Colleges.

Beginning in 1963, as certain criteria for conversion were met, the industrial education centers were redesignated as technical institutes. Action eventually was taken to give technical institute status to several unit programs being conducted by parent institutions in other counties. Also, several completely new technical institutes and community colleges were established. A total of 13 community colleges and 37 technical institutes were in operation when the study was conducted in 1969. In 1968-69, the unduplicated headcount included 240,851 individuals, and the full-time enrollment equivalent was 40,074, up nearly 25 percent above 1967-68 levels. Geographical locations of institutions are indicated by Figure 1. An organizational chart at state level is portrayed in Figure 2, while Figure 3 is the staff organizational chart of a typical institution. Figure 4 indicates enrollment by type of program.

Program Objectives

The officially stated "objectives" of the system, which might better have been termed "goals," are as follows:

1. To provide expanded educational opportunities for thousands of young people and adults who would not otherwise continue their education.

2. To provide relatively inexpensive educational opportunities for high school graduates, school dropouts and adults.

3. To provide technician programs, preparing students for jobs in industry, agriculture, business and service occupations.

4. To provide vocational programs of less than technician level, preparing students for jobs requiring different levels of abilities and skill.

5. To provide college parallel programs, consisting of the first two years of regular college studies.

FIGURE 1

NORTH CAROLINA SYSTEM OF INSTITUTIONS

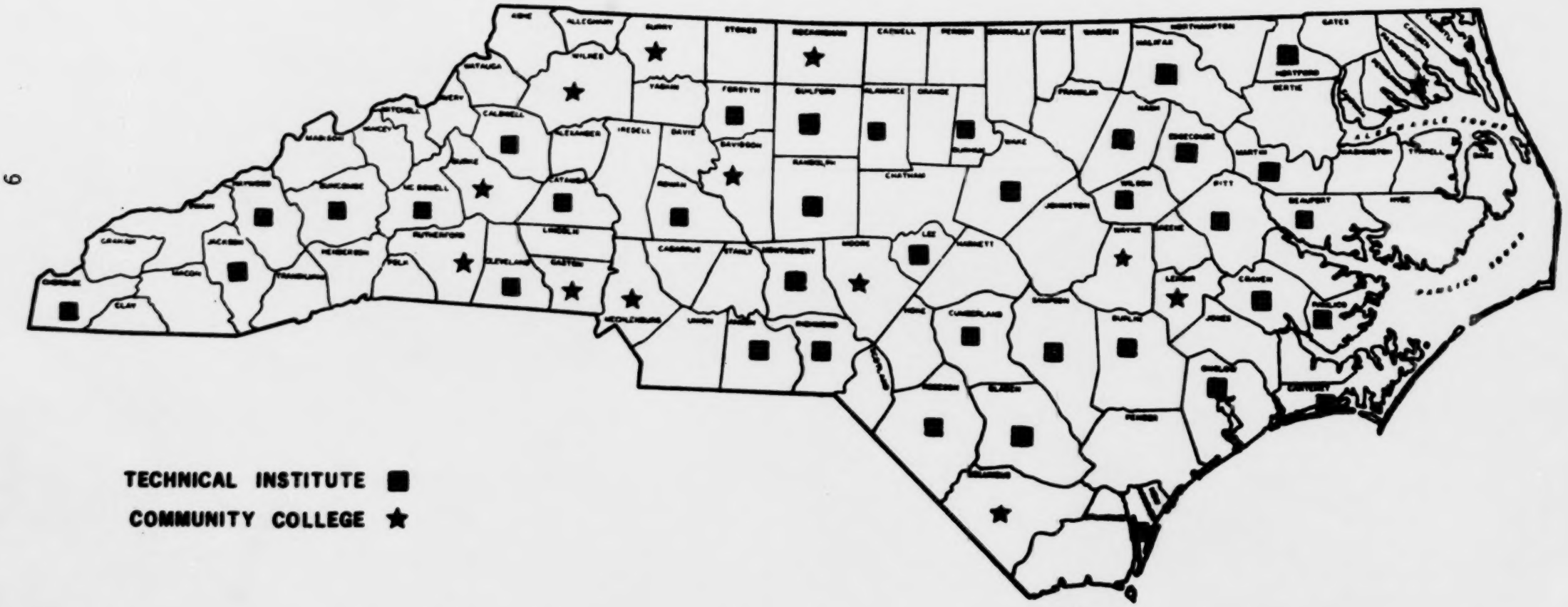


FIGURE 2

NORTH CAROLINA COMMUNITY COLLEGE SYSTEM

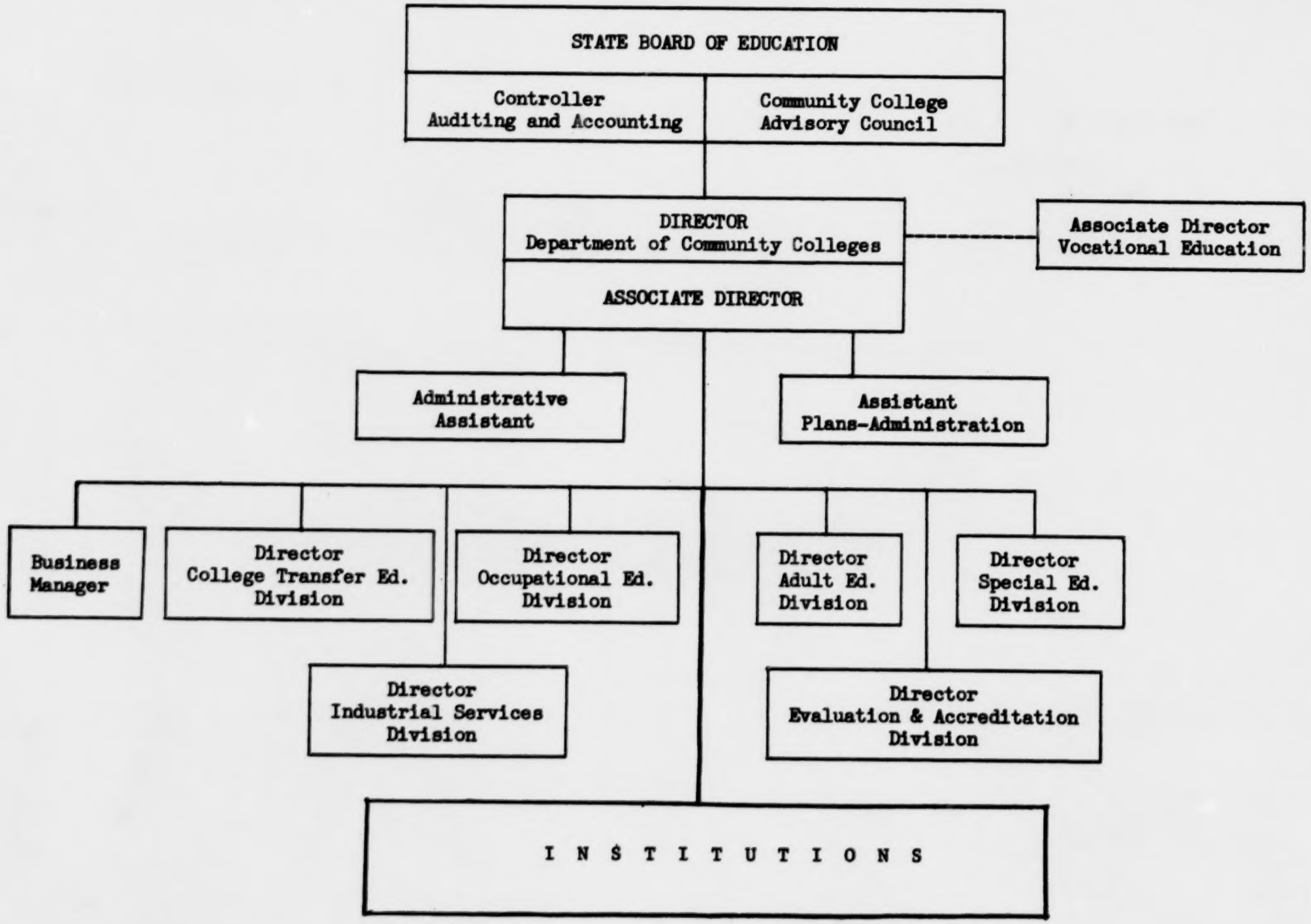


FIGURE 3

COMPREHENSIVE COMMUNITY COLLEGE

STAFF ORGANIZATION CHART

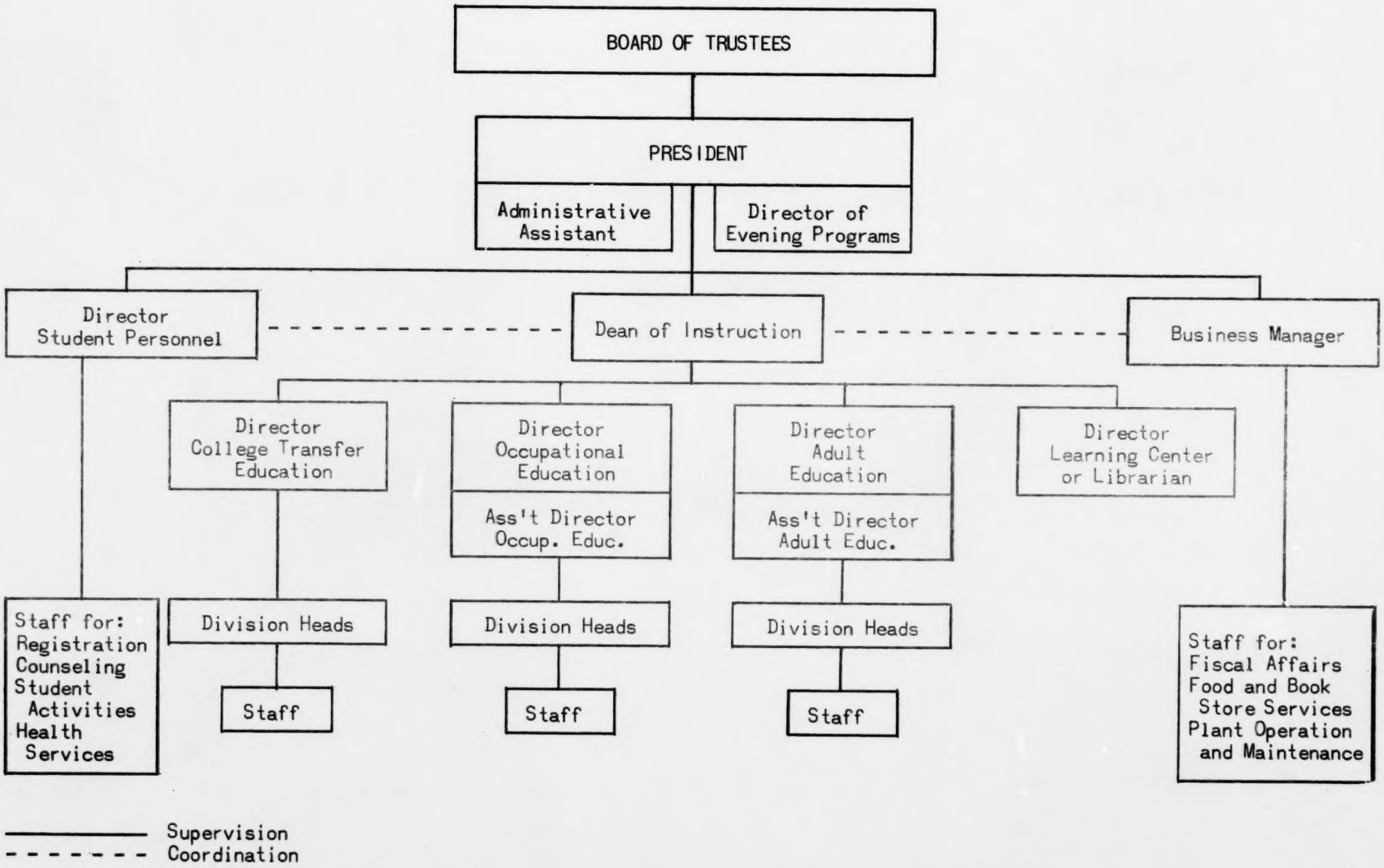
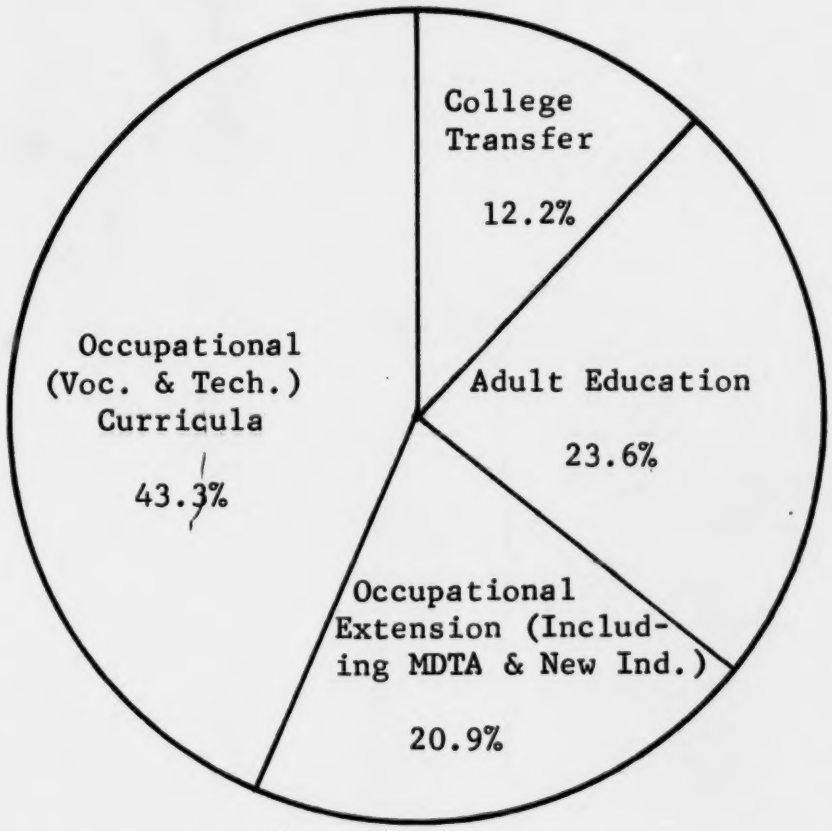


FIGURE 4

AVERAGE ANNUAL ENROLLMENT FULL-TIME EQUIVALENT BY TYPE OF PROGRAM, 1968-69
NORTH CAROLINA DEPARTMENT OF COMMUNITY COLLEGES



Program	FULL-TIME EQUIVALENT Number	Percent	UNDUPLICATED HEADCOUNT Number	Percent
COLLEGE TRANSFER	4,901	12.2	12,243	5.1
TECHNICAL CURRICULA	9,749	24.3	19,016	7.9
VOCATIONAL CURRICULA	7,632	19.0	10,795	4.5
OCCUPATIONAL EXTENSION	5,165	13.0	78,339	32.5
ADULT HIGH SCHOOL	1,508	3.8	11,680	4.9
GENERAL ADULT EXTENSION	3,616	9.0	68,625	28.6
LEARNING LABORATORY	1,514	3.8	14,309	5.9
ADULT BASIC EDUCATION	2,492	6.2	15,641	6.3
MDTA	2,176	5.4	2,387	1.0
NEW INDUSTRY	1,022	2.5	5,420	2.3
SELF-SUPPORTING	299	.8	2,396	1.0
TOTAL	40,074	100.0	240,851	100.0

6. To provide short courses that will meet the general adult and community service needs of the people of the community.

Admissions Policies

In a statement setting forth the admissions policies of the community college system, the Board of Education stated that "the door is open to any applicant who seriously wants and needs more education." Three requisites were presented as essential concomitants to the "open door" policy: (1) "a counseling service; (2) a broad curriculum that offers many types of educational programs; and (3) high quality instruction that has as its objective the highest possible development of the individual student."

This policy is one of admission, not an unqualified guarantee of enrollment in any course of the student's choice. The applicant is tested and counseled. If basically qualified, he is enrolled in the program he desires, to the extent permitted by courses offered and facilities available in the institution he wants to attend. A variety of basic and remedial courses is offered for reducing an individual's deficiencies and to assist in meeting minimum prerequisites for receiving more advanced instruction.

Types of Programs and Enrollment

Figure 4 indicates enrollment and percentages graphically.

College Transfer Programs. The principal difference between the two types of institutions is that only the community colleges offer two-year college parallel programs. All community colleges offer a curriculum in liberal arts, and a total of 25 pre-professional curricula are available in various colleges. About 12 percent of total full-time equivalent enrollment in 1968-69 was in college parallel programs.

Vocational and Technical Programs. All institutions offer vocational and technical programs. They are classifiable broadly as (1) well defined occupational curricula, consisting of several courses, requiring up to two years, which lead to a degree, diploma or certificate; and (2) extension or trade courses which are relatively short and pertain to a specific subject or skill. About 43 percent of full-time equivalent instruction was in vocational or technical curricula in 1968-69 with an additional 13 percent in occupational extension courses, which may be conducted as evening classes or in appropriate off-campus locations. In terms of numbers of individual students involved, nearly one-third of overall enrollment was in occupational extension courses.

Manpower Development Training. This program is closely akin to other kinds of vocational training, but differs in that it is largely a federally funded effort. Selection of courses and trainee participants is administered by the Employment Security Commission and instruction is conducted by institutions under contract. It is both a training and a retraining program, largely designed for workers who have lost their jobs

for reasons related to technological change and who must be prepared for new or higher level skills in order to be reasonably assured of employment. Students receive allowances for living costs in addition to the instruction provided without cost. Full-time equivalents in this program in 1968-69 were 5.4 percent of total hours of instruction, and about two-thirds of the institutions conducted one or more MDT courses.

Special Education Programs. In 1965 a special training group was designated to provide law enforcement training, job safety training, fire service training, and several other specialties. These courses are prominently associated with functioning of local and county government units, and with persons already employed by them. However, several of the subject areas are applicable to a variety of private business and industrial operations.

Industrial Services Programs. Any kind of occupational training may be expected to have beneficial effects upon total supplies of qualified workers, but the Industrial Services Program is designed to provide intensive training to qualify workers for operating specific production processes in new and expanding industries. Special funds are allocated from state sources, cooperative agreements are made with the firms concerned, and initial planning for the training usually is conducted at state level by the Industrial Services Division. About 2.5 percent of full-time instruction equivalents are represented by this new industry training.

Adult Education Programs. A number of programs under this broad category are conducted in post-secondary institutions. They are remedial or compensatory in nature. They are offered here mainly because local school systems have not met the challenge to provide these services which are urgently needed by many disadvantaged adults as a foundation for preparation in occupational skills. These programs include high school equivalency courses, adult basic education, general adult extension training, and study in learning laboratories. In aggregate, these programs accounted for about 24 percent of full-time equivalent instruction in 1968-69 and involved more than 46 percent of all individuals enrolled.

An Appraisal of the N. C. Community College System

For several decades North Carolina has been in transition from a predominantly rural society to a more urbanized industrial economy. In many respects the state has been a leader in the regional South but it is a social and economic tragedy that state levels of general education should have remained so low and that establishment of a public occupational education system was so long delayed. As a direct consequence, the recently established community colleges and technical institutes have inherited many problems beyond those patently involved in teaching work-related skills to basically qualified students in well-established institutions.

Within its overall educational mission, the N. C. Department of Community Colleges functions as a multi-purpose agency. It attempts to conduct college credit curricula nearly identical in content with the

first two years in large universities. It is primarily committed to effectively preparing a large but unspecified proportion of the young adults who will enter employment in all occupations below the strictly professional classifications. It provides a wide variety of adult remedial education in every institution ranging from the most elementary and basic subjects to individualized instruction through programmed materials. It serves local business, industry and government units of the state and nation in training workers but it also gives cognizance to diverse student interests and the individual's total education needs. One may very well question whether such a wide range of programs should be undertaken in a single institution.

In the system there are built-in problems of ascertaining and managing information, of fixing priorities and objectives, of planning, decision making, coordinating activities and evaluating results, for which there often are no definitive solutions. There are acknowledged backlogs of demand for workers in many skills. Equally important are the needs of students to acquire knowledge and skills. Both needs are admittedly continuous, but any quantitative estimates are certain to be received skeptically. Growth in enrollment and construction of new facilities has increased demands for qualified staff and faculty and presented many opportunities for their advancement. Among institutions, development has been uneven, often rapid. Nearly one-quarter of a million persons are now participating in some aspect of the programs being conducted in institutions of the N. C. Department of Community Colleges.

One of the less optimistic aspects is that opportunities to receive postsecondary occupational education continue to be limited for prospective students who live at home in sparsely settled areas. There are no dormitory facilities and ownership of, or access to, private transportation is almost a "must." In counties where population or resources are significantly low, or industrial activity and growth prospects are limited, a broad selection of curricula is seldom within reach unless the student moves his place of residence.

Although the system is state-controlled, establishment and effective operation of an institution is essentially a reflection of local leadership and of interest, initiative and support by county and local governments. Acquisition of land, erection of buildings, and their operation and maintenance are local responsibilities, and local funds may supplement any state budget item. In a number of cases, there are indications that high priority has been given to enhancing an institution's prestige. This is by no means an objectionable aspiration, provided its achievement does not adversely affect the allocation of resources to occupational and more basic programs.

In policy formulation and operational control, a fortunate balance has been developed between exercise of authority at state level and a administration of programs at institutional levels. This relationship is described by the Chairman of the State Board of Education, who has observed that the institutions are free to exercise their own judgment, within broad and reasonable limitations, as to the number of people to

be employed and the work to be done. No other public school or college or university enjoys such substantial freedom to innovate and to exercise its own best judgment in meeting its opportunities for public service. This freedom has not been abused. It has been used so productively and so successfully that it constitutes the best possible argument for its application elsewhere and for its further expansion in the Community College System."

First hand observation of the institutions indicates that neither the vitality and flexibility of the system have been understated nor the incentives for growth and operational effectiveness associated with delegation of broad authority to local administrators.

However, growth in enrollment is about the only criterion in which overall progress and achievements of the system are clearly evident. Informal inquiries into local needs of individual firms or certain occupations have been made frequently, but there is scarcely any instance where clear cut, quantitative training objectives by occupation have been announced, either for the state or for an institution. Despite these shortcomings in regard to objectives, administrators are vigorous in conducting programs that encompass as many interested students as possible, yet are as logically related to specific occupational demands as can be determined from information at hand. Somewhat surprisingly, numbers and percentages of enrolled students who graduated or completed courses have received little publicity, and usually cannot be ascertained from published reports.

Thus, firm data are lacking from which to appraise the extent to which gaps have developed between goals and outputs. Though vigorous efforts are being made "to provide expanded educational opportunities to thousands of young people and adults," few, if any, objectives have been stated quantitatively, while levels and growth of full-time enrollment equivalents is the principal measure of activity and achievement.

In closing this brief appraisal, it is hardly necessary to point out that no attempt has been made to indicate program effectiveness in terms of costs and returns, nor to adjudge quality of instruction, nor to compare the North Carolina system with postsecondary agencies or institutions in other states. This chapter does, however, provide concise descriptions and limited evaluations of some essential aspects of organization, program objectives and overall operating policies that affect virtually every aspect of information exchange.

A MODEL OF INFORMATION FLOW

In the initial phase of project development, contacts were made with state level and institutional staff members, and with personnel of several agencies other than the Department of Community Colleges. It became apparent that a graphic portrayal of organizational elements involved in occupational information exchange would facilitate discussion of the system, its procedures and problems. Accordingly, Figure 5 was constructed to provide a simplified model of some pertinent information flows within the general system that is being investigated.

This model is only one of countless graphic arrangements that could have been prepared, and was not intended to narrowly define all organizational components or types of information involved, nor to rank them in relative magnitude or importance. During interviews and completion of the questionnaire, the model proved to be so useful as an illustrative device that it has not been revised, and is considered a substantial contribution toward attainment of the second study objective--to portray the existing post-secondary institutional information exchange system.

The remainder of this chapter provides brief descriptions of the elements shown in the model, and indicates some of their functional relationships.

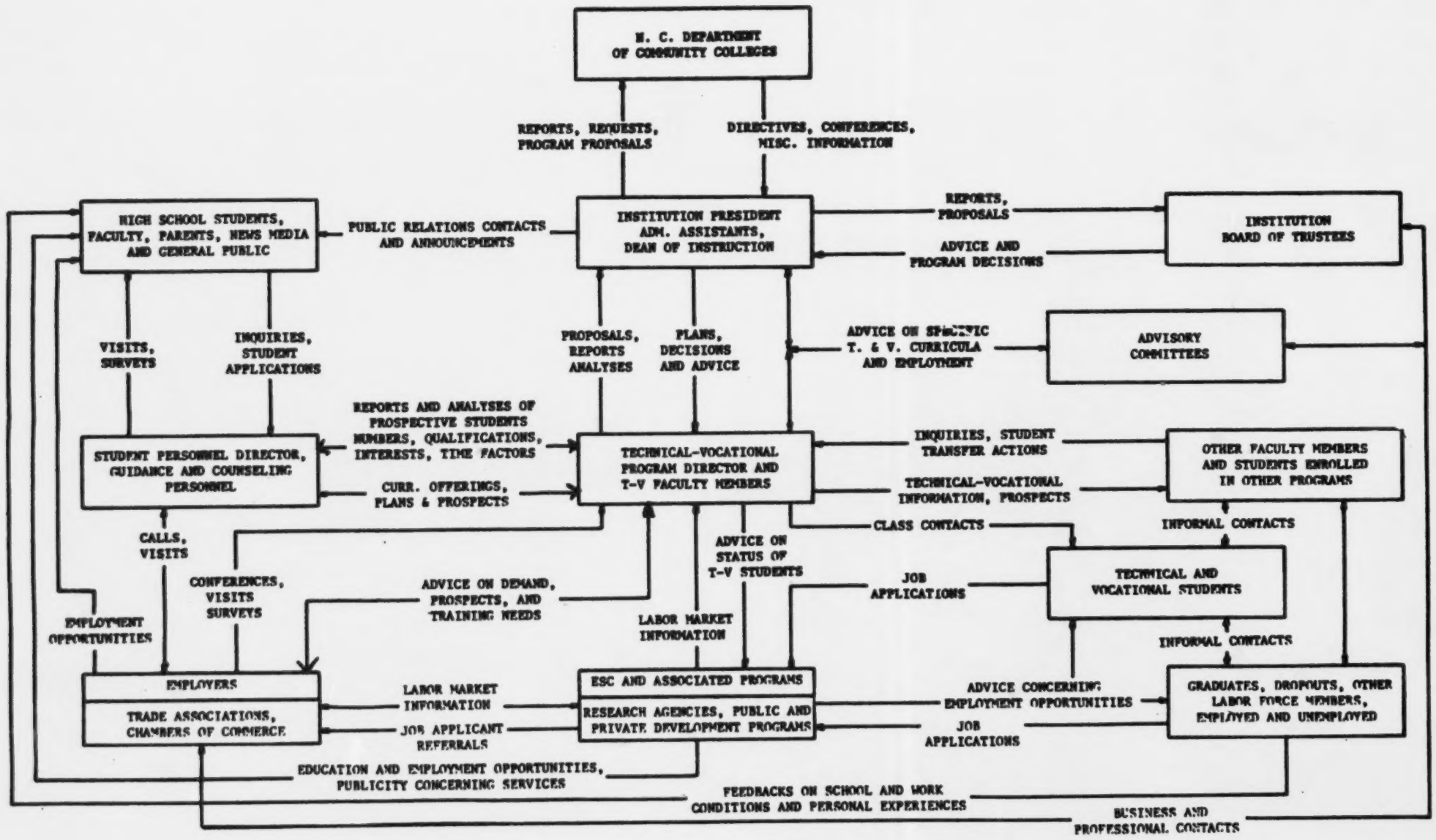
The N. C. Department of Community Colleges

This is the agency having primary responsibility for operating post-secondary occupational programs. The organization and development of the Department already has been recounted. In the model this element represents the Department Director and his state level staff of about 100 persons who serve in a minor capacity as an information source, despite policy making and other statutory responsibilities. That is to say, the Department staff itself does relatively little field survey work, either for its own uses or for the several institutions. Its efforts with regard to dissemination of occupational supply and demand data are devoted mainly to arranging for distribution of reports by other agencies, especially those of the Employment Security Commission.

On the other hand, a great deal of statistical data are received from the institutions and utilized for preparing reports. This includes routine reports of enrollment and attendance by courses. These reports also provide information as to utilization of facilities. Institutions are required to submit applications for establishment of new full-time curricula, and these applications must include evidence of employment opportunities and availability of prospective students. Applications for conversion of a technical institute into a community college must be documented in detail, including evidence derived from economic surveys and studies of student potential in the area served. Some assistance may be given in these matters by the state staff. The above descriptions

Figure 5

MODEL OF INFORMATION FLOWS RELATED TO TECHNICAL AND VOCATIONAL EDUCATION PROGRAMS IN A TECHNICAL INSTITUTE OR COMMUNITY COLLEGE


N. C. DEPARTMENT OF COMMUNITY COLLEGES
REPORTS, REQUESTS, PROGRAM PROPOSALS
DIRECTIVES, CONFERENCES, MISC. INFORMATION
HIGH SCHOOL STUDENTS, FACULTY, PARENTS, NEWS MEDIA AND GENERAL PUBLIC
PUBLIC RELATIONS CONTACTS AND ANNOUNCEMENTS
INSTITUTION PRESIDENT ADM. ASSISTANTS, DEAN OF INSTRUCTION
REPORTS, PROPOSALS
ADVICE AND PROGRAM DECISIONS
INSTITUTION BOARD OF TRUSTEES
VISITS, SURVEYS
INQUIRIES, STUDENT APPLICATIONS
PROPOSALS, REPORTS ANALYSES
PLANS, DECISIONS AND ADVICE
ADVICE ON SPECIFIC T. & V. CURRICULA AND EMPLOYMENT
ADVISORY COMMITTEES
REPORTS AND ANALYSES OF PROSPECTIVE STUDENTS NUMBERS, QUALIFICATIONS, INTERESTS, TIME FACTORS
STUDENT PERSONNEL DIRECTOR, GUIDANCE AND COUNSELING PERSONNEL
CURR. OFFERINGS, PLANS & PROSPECTS
TECHNICAL-VOCATIONAL PROGRAM DIRECTOR AND T-V FACULTY MEMBERS
INQUIRIES, STUDENT TRANSFER ACTIONS
TECHNICAL-VOCATIONAL INFORMATION, PROSPECTS
OTHER FACULTY MEMBERS AND STUDENTS ENROLLED IN OTHER PROGRAMS
CALLS, VISITS
CONFERENCES, VISITS SURVEYS
ADVICE ON DEMAND, PROSPECTS, AND TRAINING NEEDS
ADVICE ON STATUS OF T-V STUDENTS
CLASS CONTACTS
INFORMAL CONTACTS
JOB APPLICATIONS
TECHNICAL AND VOCATIONAL STUDENTS
EMPLOYMENT OPPORTUNITIES
LABOR MARKET INFORMATION
INFORMAL CONTACTS
EMPLOYERS
TRADE ASSOCIATIONS, CHAMBERS OF COMMERCE
LABOR MARKET INFORMATION
JOB APPLICANT REFERRALS
ESC AND ASSOCIATED PROGRAMS
RESEARCH AGENCIES, PUBLIC AND PRIVATE DEVELOPMENT PROGRAMS
ADVICE CONCERNING EMPLOYMENT OPPORTUNITIES
JOB APPLICATIONS
GRADUATES, DROPOUTS, OTHER LABOR FORCE MEMBERS, EMPLOYED AND UNEMPLOYED
EDUCATION AND EMPLOYMENT OPPORTUNITIES, PUBLICITY CONCERNING SERVICES
FEEDBACKS ON SCHOOL AND WORK CONDITIONS AND PERSONAL EXPERIENCES
BUSINESS AND PROFESSIONAL CONTACTS

should not be construed as minimizing importance of the policy making, coordinating and supervisory functions of the Department, nor of the assistance provided in curriculum development. However, it is clear that the main burden for assembling locally applicable information, for its analysis, and its translation into economically justifiable proposals for initiating new curricula rests with the institutions. Nor does the model indicate that there must be considerable coordination of programs between some institutions, especially among those having adjoining service areas or common interests in certain types of occupations. There is no formal grouping of institutions by geographical areas, although some Department staff members have area assignments.

The President and His Assistants

This box was placed in the model to represent a flexible element constituting the chief administrative officer and his immediate staff. Size and organization may vary considerably between schools, depending upon size and internal arrangements in the institution. In the smaller institutes it is natural to expect close, informal staff relationships, while larger colleges may have a vice president, one or more administrative assistants, and may have developed rather formal staff contact through deans or directors of large departments.

In all technical institutes and community colleges, the president is a busy man with a wide range of informational contacts. Often he is, by choice, his own public relations officer and may personally review or prepare news releases. He is vitally interested in dissemination of program information and in the public image of his institution. There are many varieties of possible contacts which cannot be shown in this model. Most of them are with agencies, firms or persons having specific or limited interests.

It is not a function of a president to personally receive, process and analyze labor market information and related data in much detail, but he is very much concerned with having reliable "benchmarks" as to student interests and enrollment potentials and outlooks for occupational employment in his service area. These are essential for shaping his overall planning and decision making, and in facilitating his many contacts in furtherance of relations in the community and at higher levels.

The Institution Board of Trustees

In chartered institutions this basic policy making body is composed of 12 members from the area, four of which are selected by the local Board of Education, four by the Governor and four by the County Commissioners. Institutions operated under contract do not have any trustees appointed by the Governor. As might be inferred from statutory appointment procedures, trustees may be of more assistance to the president in matters having political or public relations overtones than as sources of quantitative data for planning. Few are professional educators. However, they always are persons of some influence, they frequently are associated with important business or industrial interests,

and some of them may be able to provide detailed and authoritative advice in matters of planning, which could not easily be obtained otherwise.

The institution president bears a heavy responsibility for assembling, analyzing and providing appropriate information to his trustees. Applications for establishment of each full-time curriculum must be co-signed by the Board Chairman. Any trustee may be expected to request explanation as to some aspect of program operations, but motivation of some trustees to take more active interest in the institution's affairs may not be the least of a president's problems. It is fair to assume that their deliberations and decisions will be critically influenced by presentation of well documented information as to past program results, proposed plans, and budgetary considerations.

Advisory Committees

Curriculum review and modification are the chief functions of Advisory Committees, which serve the employer consultative functions required by the Vocational Education Act of 1963 for all vocational and technical curricula utilizing federal funds. The committees also may be a ready source of many kinds of advice for planning and conducting the curriculum with which they are concerned, including information about occupational employment demands and trends.

The number of members on committees is variable, and their activities may be conditioned by personal and business interests. Usually, contacts with the members or meetings of the committee are initiated by the staff or faculty member most immediately concerned with initiating or conducting the curriculum.

Student Personnel Services

Practically every member of the staff and faculty in community colleges and technical institutes plays some role in disseminating and collecting program information. Of all those concerned, none are more extensively involved than the Director of Dean of Student Personnel and his associates, who include counselors, the registrar and clerical or other assistants. The director usually serves in addition as job placement officer and in some cases as the public relations officer.

The personnel group, acting individually or sometimes as a team, visits students and faculty in secondary schools and persons in many other types of organizations throughout the service area. Contacts are made with employers to assist in placement of graduates and to supplement the efforts of the vocational and technical faculty members in ascertaining occupational training requirements. Most of the collection and analysis of data pertaining to student availability and enrollment prospects is conducted under supervision of the Student Personnel Director.

The Occupational Education Division

This block indicates some principal communications relationships

of the group until recently designated as the Technical-Vocational Division. More than any other, it is directly engaged in curriculum planning, establishing courses and conducting instruction in vocational and technical programs. Indications of prospective student interests are provided by the personnel group, but the bulk of information relating to occupational needs is obtained from the Employment Security Commission, trade and development associations, advisory committees, and first-hand through visits to employers. Vocational and technical faculty members may also visit secondary schools and assist in other ways in preparing and disseminating program information.

Emphasis in this study on full-time vocational-technical curricula has, to some extent, diverted attention from lesser programs. Relatively short training courses, which do not lead to degrees, in aggregate involve large numbers of students and serve both general education and occupational training functions. The extension courses, most of which are evening classes, provide a flexible medium for pursuing cultural interests and for upgrading workers' skills. Currently, about 33 institutions are under contract to conduct occupational instruction under the Manpower Development Training Act, in which recruitment is effected by the Employment Security Commission. Under state-level supervision of the Industrial Services Division, intensive training courses are tailored to fill particular needs of a new or expanding industrial firm. About 30 of the 50 institutions are currently conducting courses of this type.

High School Students, etc.

This broadly inclusive block, also containing news media and the general public, is both a target and a vehicle for most of the program information which institutions disseminate. Students who expect to graduate from high school during the current year are the most important contacts, for they will constitute a very large percentage of potential new enrollees who are qualified for full-time vocational and technical curricula. In community colleges, where college parallel courses are conducted as well as occupational education, information as to college transfer programs is provided through the same media.

Inasmuch as this element has been specified to include the general public, and to emphasize the open door policy, it should be noted that the publicity in several respects does not pertain to degree-type programs. Extension enrollment accounts for greater numbers of participants than do full-time students, in every institution, although such courses require much fewer total class hours.

Vocational and Technical Students

This element has been shown partly because of the broad opportunities for these students to disseminate first hand information concerning their training and their impressions of conditions in the institution. No students in this system live on campus, and their contacts with families and friends may be more frequent than in the case of resident students in senior colleges.

Virtually all vocational and technical students are already employed in some capacity, or are anticipating employment upon termination of training, often before graduation. Under these circumstances, there are incentives for students to make frequent inquiries regarding employment opportunities, and to receive much related information from faculty members and prospective employers. The Employment Security Commission, in addition, operates a public employment service, but it appears that in most areas the demand for occupationally trained workers is so evident that not many prospective graduates utilize this agency.

Other Faculty Members and Students

This element consists of faculty members who conduct courses other than those classified as technical and vocational. It also covers students who are not enrolled in occupational programs. At one extreme among these students are persons of limited achievements who are receiving remedial attention, as in adult basic education. At the other are students who may be well qualified for enrollment in technical training but are engaged in college parallel curricula or courses which are not occupationally directed.

It is not easy to estimate quantitatively the influence of these heterogeneous components, nor to postulate occupational information considerations or objectives. However, the institutes are committed both to total education and to an open door policy. Instructors in "academic" subjects play important roles in helping occupationally oriented students to expand the scope of their general education and increase their ultimate effectiveness as workers and citizens. Conversely, in the environment of community colleges, non-occupational students stand to gain appreciation of the economic and social importance of work-related skills, possibly more meaningfully than they might in institutions where vocational training is not conducted. And especially in cases of students who were not qualified to be accepted into skilled training programs, improvement in general education should provide incentives for inquiries and applications for occupational curricula, as they attain minimum prerequisites.

Graduates, Labor Force, etc.

As in the case of actively enrolled students, this block was inserted to indicate possibilities for important feedbacks or transmission of information from former students. This should be exploited to bring additional applications for enrollment or at least in stimulating interests among several categories of employed or unemployed persons who are no longer in school, and who would not be contacted during staff visits to high schools.

Any prospective enrollees may receive specific occupational program information, interviews, or guidance from the institution, or from an Employment Security Office in connection with applications for employment. Many job leads may come through miscellaneous institutional contacts or formal placement efforts of faculty and staff members.

Institutions make efforts to follow up the location and employment status of graduates from full-time curricula, by means of questionnaires.

These feedbacks could furnish valuable information concerning the utilization of skills acquired through training. Information about migration, occupational mobility, wage levels, military service, and other data for planning, adjusting or evaluating the programs can be obtained in this manner. Several questions were directed to these matters in the data collection interviews.

Employers, Trade Associations, etc.

This element, which includes some of the persons who constitute advisory committees and boards of trustees, is the predominant source of first hand information as to current and prospective occupational demands within business and industrial firms. In the visits and other contacts made by institutional representatives, data about the needs and prospects of separate firms are noted. Employment and outlook data in much greater volume and degree of aggregation are obtained from the Employment Security Commission or from other collection and research agencies, which receive and consolidate reports from large numbers of firms.

No institution has the staff capabilities for sustained contacts with every employer in its service area, but selected liaison with firms typical for an industry, or those with important growth prospects or training needs is of great importance in program planning and in maintaining good public relations.

Information exchange is by no means a one-way operation, with institutional staffs contacting employers. Many firms are interested in ascertaining what current and future labor supplies are being generated through public training programs. Others are interested in various measures such as industrial services programs, and will contact the president or other staff members. A great deal of staff work and planning may result from such contacts, either to review and represent the institution's facilities and training capabilities, or to prepare proposals which require action at state level.

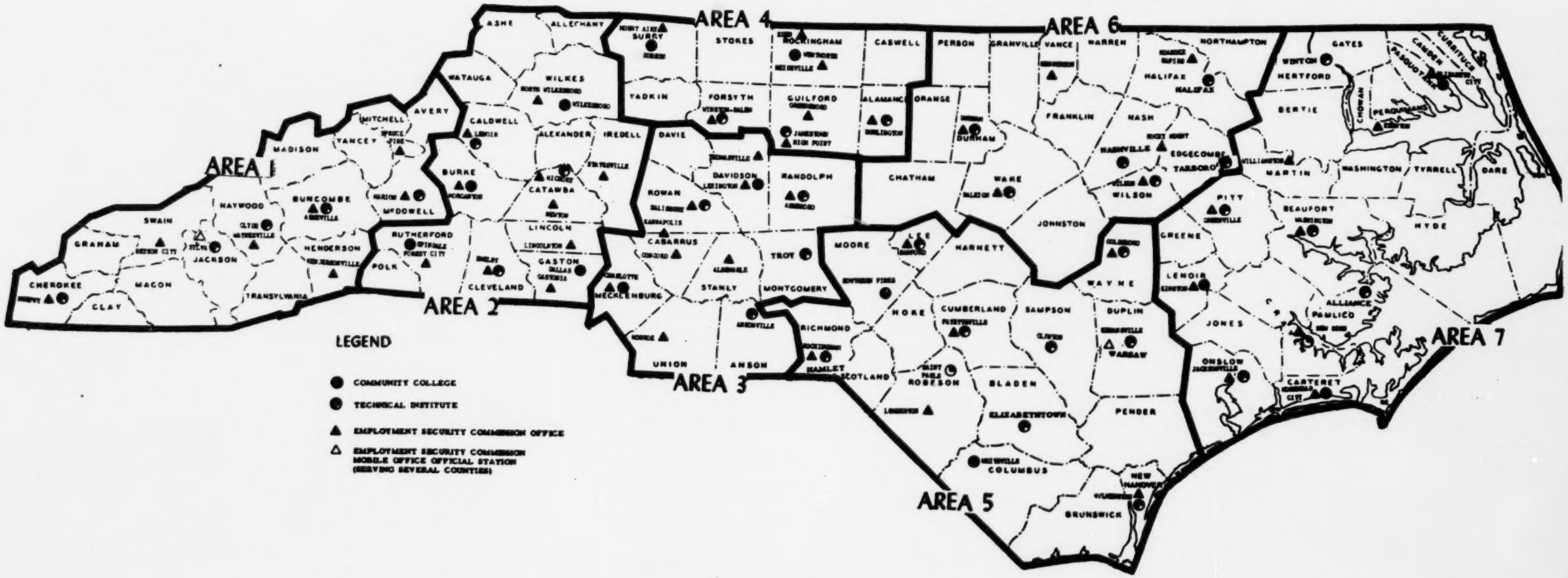
Employment Security, Research and Related Programs

The Employment Security Commission of North Carolina, operating in conjunction with the U. S. Department of Labor, is the prime data resource agency for state educational organizations in regard to industrial and occupational employment. Through 57 area offices, at least one of which is located in the service area of every technical institute or community college, it operates public employment services. However, the most comprehensive reports pertaining to post-secondary training needs are prepared through research directed at state level and released in publications such as "Employment Outlook for Selected Occupations in North Carolina, 1966-1970". This particular report, in which the Department of Community Colleges cooperated, is a study of job opportunities and training needs for 107 occupations in 33 industries and industry segments. ESC organization is shown in Figure 6.

FIGURE 6

AREAS DESIGNATED FOR DISTRIBUTION OF STATEWIDE SURVEY FINDINGS

LOCATIONS OF TRAINING INSTITUTIONS AND NORTH CAROLINA EMPLOYMENT SECURITY COMMISSION OFFICES



The ESC and its local offices issue several other kinds of periodic and special reports which have some relevance to occupational training. In general, however, they are based upon industrial rather than occupational classifications and are concerned with current employment levels rather than analysis of training needs.

Even from preliminary inquiries, it was found that the less formal aspects of information exchange between ESC offices and the institutions are affected by widely ranging local conditions. They are influenced by the nature of the area economy and relative needs of an institution for ESC data, local office policies and interagency working relationships which have developed over time. Further discussion of interagency arrangements would be tangential to the purposes of this report, but it is fair to observe that statutory provisions for the ESC system to cooperate with federally-funded education programs in exchanging labor market information did not insure that either side would have adequate resources to attack all labor market information problems, particularly those peculiar to small areas or specified institutions.

Most of the research efforts of universities do not privide data that are expressly applicable to occupational programs in a particular institution. Nearly all kinds of area and industrial development associations collect information of some kind on employment needs and growth potentials in their areas of interest but they are likely to rely upon the Census or ESC statistics for many details. Nevertheless, effective liaison with development agencies can provide much advance information on efforts to locate industries, and for tentative planning as to their occupational training needs.

The most recent attempt to provide comprehensive interagency coordination is the Cooperative Area Manpower Planning System (CAMPS). Pioneered by the Department of Labor, it was formalized by Executive Order in 1968 to include eight federal departments or national level agencies which are concerned with manpower training and supportive manpower programs. In North Carolina, the Department of Community Colleges is represented on the State CAMPS Committee, and an institutional representative from that area serves on each of the 19 area committees.

The North Carolina Department of Community Colleges collects and develops demographic and labor market data only to a very limited extent. However, with support from the Costal Plains Regional Commission, it has contracted with the Research Triangle Institute to conduct a study of manpower requirements for North Carolina. Using occupational employment projections and other results of this study, a four-volume report has been published to provide a model budget for 1971-73, operating plans for 1971-75, and a ten-year strategic plan for 1970-80. These data and projections constitute the most important long-range occupational information available for post-secondary institutions in this State.

CONCEPTUAL FRAMEWORK FOR THE STUDY

The primary purpose of this chapter is to connect the main organizational elements in the overall model of information flow, Figure 5, which was discussed in the preceding chapter, with the topically aggregated reports of interview responses. Each of those main subject headings is treated as a subsection in the chapter on results of interviews. This connection is effected by Table 1 which shows both model and report interfaces and relationships with the principal functions involved in operating a post-secondary education system. Table 1 is largely self-explanatory and will not be discussed in detail.

Conceptual Models

In addition to Figure 5 and Table 1, two other conceptual models are presented. One of these is shown in Figure 7, which portrays a dynamic system for managing information for occupational programs in a post-secondary institution. Whereas all blocks in Figure 5 represent organized elements or unorganized categories or groups of individuals, the blocks in Figure 7 represent resources, products, criteria, or processes.

To appreciate the dynamic nature of Figure 7, one may realistically assume that, when steps are taken to establish a new institution, inputs such as assignment of professional personnel and transfers of authority, funds and tangible resources will begin. This is effected or guided by directives ranging from basic statutory requirements to much more flexible policies, allocations and advice from the parent agency, and by assistance from supporting agencies. Data resources of many kinds are accumulated and become an initial reservoir of information which is analyzed and first used to implement the general mission by the setting of broad goals and more specific objectives.

In successive events students enroll and program operations begin; students receive instruction and become program outputs; these human products are evaluated, at the very least by appraisal and varied degrees of acceptance by employers; and the feedbacks from evaluations and inputs from all other developments are used both to make immediate operational adjustments and to become a part of the overall supply of organized information. From this point a new round of analysis, planning, decision making and operations begins, which will progress as slowly or as rapidly as circumstances dictate.

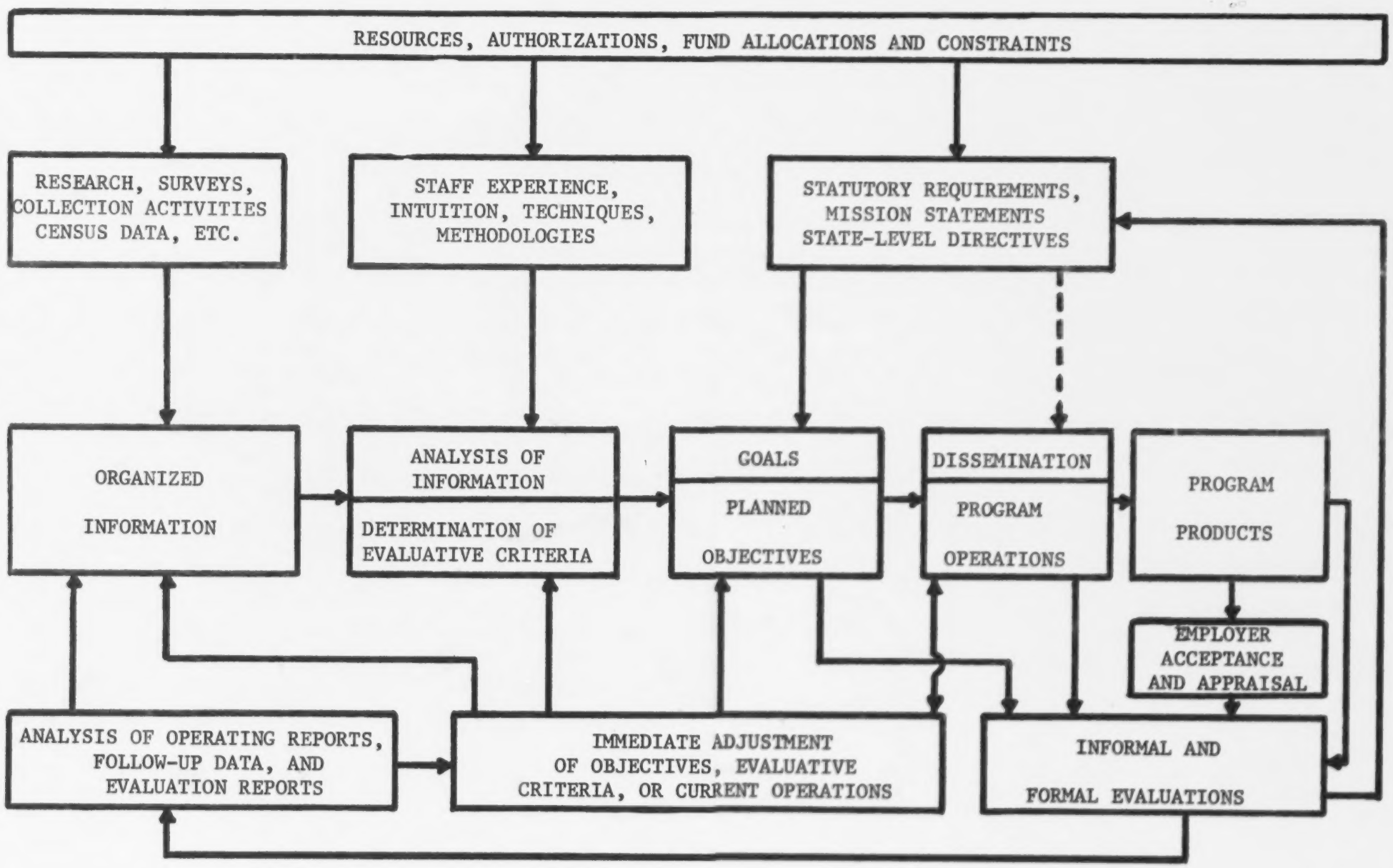
In Figure 8 a model is presented in matrix form that aligns and connects seven major information exchange factors, each of which has both internal and external relationships with respect to an institution's operation. Because of the large number of sharply or slightly differentiated types and uses of information, details have not been spelled out. However, vector headings indicate that any type of information may be specified in the first column and horizontally to show conceptual and operational connections between its principal uses, means of acquisition, users, its analytical treatment for planning and decision making, its immediate or operational management, and its evaluative aspects.

Table 1 - Conceptual Framework, Showing Relationships Between Interview Questions, Reports of Responses, Model of Information Flow, and Major Functions Concerned in Program Operation.

Question Numbers in Interview Guide	Title of Subsection in Chapter on Results	Principally Concerned Categories Shown in Information Flow Model, Figure 5	Major Ends or Functions Involved
1, 2, 11	Dissemination Activities	High school students, news media, general public; President and his staff; Student Personnel Department; Technical and Vocational faculty; Employers.	Recruiting, Counseling
3, 9	Job-Placement and Follow-up Inquiries	Currently enrolled students; graduates, drop-outs; Technical and Vocational faculty; Student Personnel Dept.; Employment Security Commission; Employers.	Job Placement, follow-up inquiries, program evaluation.
4	Economic Base Information	President and his assistants; Student Personnel Director; Technical & Vocational program heads; Employment Security Commission; Research and Development agencies.	Planning
5	Use of Secondary Data Sources	Generally same as above	Planning, Evaluation
6, 7, 8	Collection and Development of Information	Generally same as above, with emphasis on survey activities by staff and faculty.	Planning, Evaluation
10	Advisory Committees	Advisory Committee; Technical and Vocational program heads.	Planning; Development of Curricula
12	A Model of Information Flow	The categories shown in Figure 5.	Overall program operation.
13, 14	Interviews with presidents	Institutional Presidents and their immediate staff.	Overall management

FIGURE 7

A DYNAMIC SYSTEM FOR MANAGING INFORMATION FOR OCCUPATIONAL PROGRAMS IN A POSTSECONDARY INSTITUTION


RESOURCES, AUTHORIZATIONS, FUND ALLOCATIONS AND CONSTRAINTS
RESEARCH, SURVEYS, COLLECTION ACTIVITIES CENSUS DATA, ETC.
STAFF EXPERIENCE, INTUITION, TECHNIQUES, METHODOLOGIES
STATUTORY REQUIREMENTS, MISSION STATEMENTS STATE-LEVEL DIRECTIVES
ORGANIZED INFORMATION
ANALYSIS OF INFORMATION
DETERMINATION OF EVALUATIVE CRITERIA
GOALS
PLANNED OBJECTIVES
DISSEMINATION
PROGRAM OPERATIONS
PROGRAM PRODUCTS
EMPLOYER ACCEPTANCE AND APPRAISAL
ANALYSIS OF OPERATING REPORTS, FOLLOW-UP DATA, AND EVALUATION REPORTS
IMMEDIATE ADJUSTMENT OF OBJECTIVES, EVALUATIVE CRITERIA, OR CURRENT OPERATIONS
INFORMAL AND FORMAL EVALUATIONS

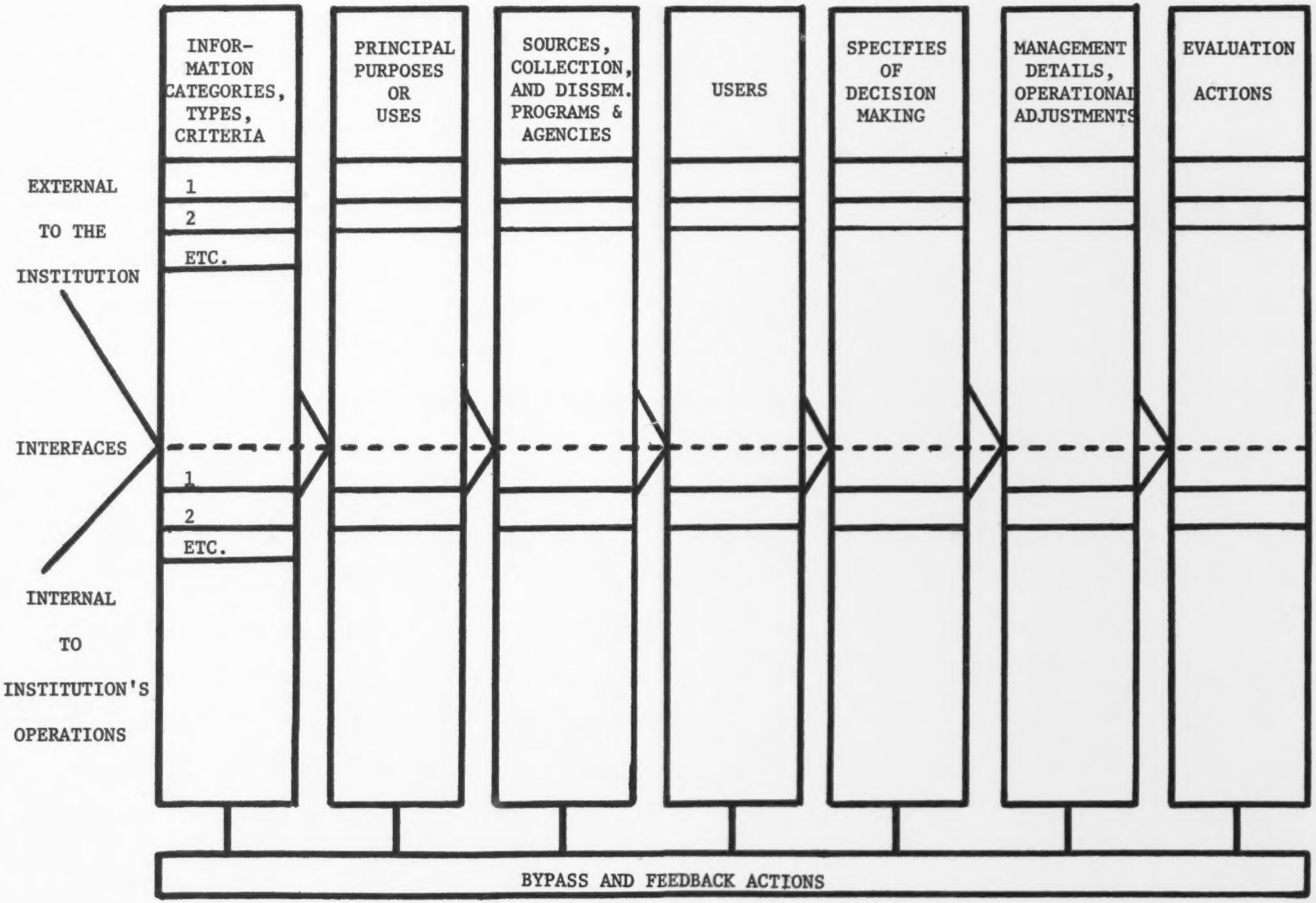
Vertically, the columns provide for resolving each information factor according to whether sources or applications are internal or external to the institution. There are interfaces between both internal and external varieties within factors and between each factor, while potentials for feedbacks and shortcuts are noted.

Significance of the Models

These three models plus Table 1 provide a conceptual framework for the study and constitute attainment of the second objective--modeling representative institutional information systems. Although Figure 5 very specifically pertains to the structure of post-secondary systems and channels for information exchange, Figures 7 and 8 have much broader application. The matrix of information exchange factors presented in Figure 8 may be generalized to apply to almost any type of organization, educational or otherwise, in that it provides a systematic basis for specifying the kinds of internally and externally generated information needed for the program, and for tracing its logical application from initial acquisition, through analysis and decision making, to product evaluation and program readjustment.

FIGURE 8

A MATRIX OF INFORMATION EXCHANGE FACTORS IN OCCUPATIONAL EDUCATION



INTERVIEWS: RESULTS AND DISCUSSION

Responses from the interview questionnaire are reported in this chapter under nine headings. Insofar as practicable, results are presented initially for each section by listing the interview questions and responses. This is followed by more detailed explanation or by a summary where necessary. The latter part of each section is devoted to a critical discussion of results, in which conclusions are drawn and opinions expressed in light of all available information.

Not all questions were answered in every institution. For example, some directors could not discuss follow-up experiences because their programs had been in operation for less than one year and had not yet produced any graduates. In the case of other questions, some respondents did not feel their programs and experiences had generated enough information to justify definite statements, while in a few instances respondents appeared reticent to discuss conditions which might be contrued as reflecting unfavorably upon them or their institutions. In general, however, the interviews were cordial, questions were answered fully and candidly, and the principal problem in recording was in clasifying and condensing the responses and eliminating comments which ranged beyond the scope of the project.

Dissemination Activities

These matters were covered in questions 1, 2 and 11 of the interview guide. They were intended to provide some measure of the extent to which occupational education information is conveyed from the institution to the prospective student.

Interview Question

1. (a) In your institution does the Director of Student Personnel provide the principal liaison with faculty and students in secondary schools in the area, by personal visits?

Responses	Number of Institutions
yes	45
no	3
no reply	2

(b) On such visits, do counselors usually accompany the Student Personnel Director, or other representative?

yes	32
no	16
no reply	2

(c) Do any <u>other</u> members of the institution's faculty and staff also visit most high schools in the area at least once during

the school year, to provide information relative to technical and vocational curricula?

yes	35	(of which 12 institutions indicated that vocational and technical faculty members also made these visits)
seldom or not at all	15	

(d) During the past year, has some representative addressed Parent-Teacher Association meetings at the high schools in connection with occupational curricula and related matters?

yes, in most high schools	12
yes, in a few high schools	27
no, or no response	11

(e) Other than visits to secondary schools, are any other organizations or firms visited regularly or frequently for the purpose of contacting prospective students?

yes	22	(industries were mentioned 10 times, civice and community groups 5 times, church groups 4 times, and 5 other types at least once each)
no	20	
no response	8	

Summary of Responses to Question 1.

In 90 percent of the institutions, the Director of Dean of Student Personnel himself was maintaining the principal liaison with faculty and students in secondary schools. Only three institutions indicated that any staff members were assigned principal duties as "recruiters," but many persons performed some recruiting functions.

Sixty-two percent of the institutions indicated that counselors regularly or frequently accompanied the student personnel director on visits to schools. Seventy percent of institutions often sent along vocational and technical faculty members, or instructors in other courses. Concentrations of these visits come when high schools hold "college days" but the great majority of personal contacts by the Student Personnel Director were made during visits spread throughout the year.

Twenty-four percent indicated that representatives had appeared at

PTA meetings in practically all secondary schools. In 54 percent, only a few schools had been visited, and no PTA visits had been made in 22 percent of the cases.

Interview Question

2. (a) Other than your general catalogue, and announcements released to newspapers, TV or radio, does your institution regularly or frequently publish and distribute other types of printed information on technical and vocational programs?

Responses	Number of Institutions
yes	49
no	1

(b) Does any one staff member have the duty of preparing or coordinating the release of outgoing information to news media?

yes	26
no	24

(c) Is paid advertising (newspapers, radio, or TV) employed in publicizing your program?

yes	46
no	4

Summary of Responses to Question 2.

All of the institutions except one had published a general catalogue of information and courses. Also, extensive use was being made of brochures or leaflets pertaining to a single curriculum or course of study. All except five institutions had published such leaflets, which were used to provide information to an individual about a particular course, and for general distribution to schools to supplement the catalogues provided for school libraries.

Ninety-two percent of the institutions had used paid advertising in some form. In nearly all cases this included newspaper advertisements, usually displayed before the beginning of a semester. Paid radio advertising was employed by about one-third of the institutions, but virtually all of them had been able to get much free publicity via radio. Only three institutions had paid for television announcements, and it appeared that very little if any television coverage could be obtained without cost. Advertising novelties included printed match books and capsules which contained information about occupational programs and benefits.

Although high schools were by far the most important target for dissemination efforts, 44 percent of the institutions indicated that frequent visits were made to organizations other than schools for the purpose of contacting prospective students. The largest number of such

visits were to plants and business concerns, but 10 kinds of groups were mentioned, with civic organizations, church and youth groups, community action organizations and ESC offices being noted in that order. One institution stated that regular visits were scheduled to nearby senior colleges, presumably in order to obtain information about dropouts. Several institutions made special efforts to contact returning military service personnel.

There were many variations in organization for preparation and control of outgoing information of news media. About one-half of all institutions had one person designated as public relations officer or a similar title, to coordinate and assist in preparation of material for publication. Usually, this individual was the Director of Student Personnel or an administrative assistant to the President. In a few instances, the Vocational and Technical Director, the Extension Program Director, or the Librarian served in this capacity. In six institutions the president personally performed these functions, and it appeared probable that there were few institutions in which the president was not informed before most press releases were made.

In the remaining one-half of the institutions, there were no formal provisions for centralized preparation of press materials and related publicity, although they were usually cleared through a department head or the president.

Interview Question

11. Other than prospective students or their parents, which of these categories of persons most often pay visits to your institution in connection with technical and vocational programs:

Responses	Often	Occasionally	Seldom	No Response
Employers	9	32	3	6
Secondary school educators	10	22	11	7
State agencies (other than Dept. of Community Colleges)	4	19	15	12
Local or county government officials	6	22	13	9
Local or area Industrial Development Associations	12	13	12	13
Antipoverty groups or social workers	12	16	12	10
Civic clubs	12	22	10	6
Other groups (specified by respondents):				
Student groups	7			
Church groups	1			
Local citizens	1			

Summary of Responses to Question 11.

Many prospective students visit institutions in order to obtain information about programs and to submit applications for enrollment. During "open house" occasions, large numbers of parents may also attend. Employers or their representatives led all other categories in personal visits, being reported by 41 institutions as having come often or occasionally. Secondary school faculty members, particularly counselors, were noted by 32 institutions as visiting often or occasionally.

Representatives of industrial development agencies and members of welfare or community action groups were the two types noted by 12 institutions as frequent visitors, although as occasional visitors they ranked well below employers and high school faculty, and in 12 institutions they seldom came.

Representatives of state agencies and local governments visited most institutions seldom or only occasionally, and were noted as frequent visitors in only 6 institutions. In several instances, respondents commented that fairly large groups from schools visited their institution for supervised tours. These students from local schools probably constituted the largest number of visitors over a yearly period.

Dissemination Activities: Discussion

The most impressive feature in this subject area is the role being played by the Director of Student Personnel. Nearly all of the visits to secondary schools are made by him personally, or through his arrangements for contacts by other staff and faculty members. The initiative and energy of the Student Personnel Director and his small staff play a vital role in publicizing occupational programs and in making personal contacts with prospective students. Much of this is out-and-out "recruiting," which needs no apology, so long as the student is accurately informed as to his alternatives and is not led or pressured into enrolling for training in which he is either not interested or not basically qualified.

Aspirations of parents to have their children enrolled in "college," or in college-type curricula, rather than occupational programs, were often mentioned as a problem, but contacts with parents did not appear to be given very high priority. From the fact that PTA meetings were not visited regularly, or at all in many institutions, it appeared that little effort was being made to take the issue directly to parents of prospective students.

Students in the senior class or upper high school grades are sought after as desirable prospects for enrollment in postsecondary vocational and technical training, but the better qualified graduates usually are advised and even urged by high school faculty and parents to enroll in college credit curricula. However, the numbers of academically well-qualified recent high school graduates unquestionably are small in

comparison with numbers of average students, dropouts, and other young persons, employed and unemployed, who could profit from enrollment in some phase of adult and occupational education programs. There is a great challenge to everyone in occupational and general adult education to devise local and individual solutions for bringing more persons into appropriate programs who are not fully qualified to receive skill training, but who could become so qualified with relatively little more guidance and special attention.

There is no rule of thumb that can be applied to determine how much advertising a post-secondary school should employ, but there is little excuse for failure to recognize the critical nature of public relations and to provide a sustained flow of interesting press material related to the institution's programs. The various arrangements made for preparation and release of program information, and the absence of centralized control in about one-half of the institutions indicate that improvements could be made in many cases.

Job Placement Assistance and Follow-up Inquires

These topics, covered by Questions 3 and 9 in the interview guide, are closely related, but the questions were asked for distinctly different reasons.

In the job placement questions, the purpose was to ascertain how job placement services were being made available, and to what extent they were being used.

The questions on follow-up inquiries were not concerned with how the student obtained a job, but whether the institution was obtaining information on which to adjust courses and evaluate the adequacy of its programs as evidenced by the occupational employment and progress of its graduates.

Interview Question

9. The following questions pertain to placement of vocational and technical students in jobs:

   (a) Most of graduates in technical and vocational courses have accepted employment offers by the time of their graduation.

Responses	Number of Institutions
yes	35
no	3
no graduates yet or no response	12

   (b) Approximately what percentage of such graduates have secured employment by referral to prospective employers through the ESC system:

None	17
Some, but not over 10%	16
Over 10% to 25%	3
Over 25%	2
No response or no graduates	12
Mean percentage estimated having secured employment through ESC referrals	5.6%

(c) Approximately what percentage of T. and V. graduates probably secured employment through information provided by faculty or staff members?

Less than 20%	None
20% to 50%	12
51% to 75%	11
76% to 100%	15
No graduates or no response	12
Mean percentage estimated to have secured employment through staff and faculty contracts	67.7%

(d) For Technical and Vocational students, does any member (or members) of the staff have the duty of coordinating placement activities?

Yes	47	(In 28 cases the Director of Student Personnel was specified; in 6 cases a counselor; in one case each, a registrar, administrative assistant, and each dept. head; in 10 cases the other assignments were not specified.)
No placement officer reported	3	

(e) Are specific measures taken to facilitate employment or further training of dropouts?

Yes	19
No	19
Indefinite, or no response	12

Interview Question

3. The following questions pertain to students who have graduated from technical and vocational curricula, or who have dropped out before graduation:

(a) Is a regular procedure followed, by which graduates are contacted by letter or otherwise, upon completing their courses, to determine how they are employed, where they are located, etc.?

Responses	Number of Institutions
Yes	33
No, or no graduates yet	17

(b) Approximately what percentage of graduates usually reply to these requests for information about them?

Percentage Replying	Number of Institutions
Less than 10%	None
10% - 49%	6
50% - 74%	18
75% - 99%	9
Indefinite, no graduates, or no response	17

In addition, 3 institutions indicated that 100% returns had been received from "exit interviews" conducted before graduates left the school.

Mean average percentage of returns from reporting institutions	62.4%

(c) Are dropouts also contacted, either before or after leaving, to obtain and record information of this kind?

Yes	32
No	9
No response	9

(d) On the basis of such information, either for graduates or dropouts, have any detailed reports or studies been made, to indicate or analyze their employment status, location, incomes, etc.?

Yes	16
No	23
No response	11

(e) Has such information about employment experiences of graduates or dropouts, whether reported informally or in written studies, actually constituted an important factor in decisions to institute, revise or discontinue a technical or vocational curriculum?

yes	10
no	30
indefinite, or no response	10

Among affirmative replies, the curriculum or courses established, revised or discontinued were:

Auto mechanics
Machine shop (3 cases)
Data processing
Vocational math
Mechanical drafting
Electronics (2 cases)
Wood utilization
Agricultural technologies
Textile skills (2 cases)

Summary of Responses to Questions 9 and 3.

In nearly all of the institutions, the Student Personnel Director or a member of his department had been designated, or had accepted the task of placement officer as part of his duties. In six cases a counselor was designated; in one case an administrative assistant; and in one case the registrar had the assignment.

All except three institutions (excluding those which had been recently established) indicated that most of their graduates had accepted employment by the time course work was completed. In those three cases, it was estimated that about 50 to 60 percent had been placed by time of graduation. Two of those three institutions were in areas where out-migration was rather frequent, and one was located in an area in which textile manufacturing was predominant.

Estimates were very low regarding percentages of graduates who had obtained employment through an Employment Security Office, ranging from none in 17 cases to a maximum of 25 to 35 percent in 2 cases. The mean average was less than 6 percent. The highest estimates came from community colleges, but there was no evidence to explain why use of ESC employment devices should have been higher there than in technical institutes.

Estimates of the percentage of graduates who either obtained jobs directly through staff and faculty efforts, or were given information which enabled them to secure a job, ranged from 20 percent to 100 percent with a man of 68 percent.

Regarding measures taken to facilitate employment of dropouts, about one-half reported that no special efforts were made. A variety of efforts

were reported in the others. Those included exit interviews; counseling when advised of unsatisfactory progress; referral to ESC; and advice aimed at enrolling the dropout in extension work or basic courses to help correct demonstrated deficiencies. There was no common pattern discernible as to reasons for dropping out. Some administrators complained that many excellent students left before completing their studies because of attractive job opportunities; others indicated many of the dropouts were due to insufficient general education.

One of the most experienced presidents stated that he tried to get a large amount of practical work scheduled early in all curricula, both to orient the student in the skill requirements and to create interest at a critical time in his education.

Thirty-three institutions had established regular procedures to have a questionnaire mailed to vocational and technical graduates in an effort to ascertain facts about their subsequent employment. These questionnaires were not standardized, and varied from post cards to data sheets of two pages that contained 50 or more items required consideration in making entries.

The approximate percentage of replies reported from follow-up letters ranged from 10 to 99 percent, with an average of 62 percent. Probable reasons for failure to get replies were often ascribed to the graduate being in military service or having moved to an unknown address.

Of the remaining 17 institutions which reported no follow-up efforts, the majority had been in operation such a short time that very few, if any, students could have been graduated from credit curricula. However, some of the older technical institutes and two of the community colleges were not using follow-up questionnaires. No institution indicated that follow-up inquiries had been made involving students enrolled in extension courses.

A variation of the follow-up procedure was in use in at least three technical institutes in the form of a preliminary or exit interview executed prior to graduation. In all three cases, respondents said that returns were obtained from 100 percent of students concerned.

Sixteen institutions indicated that they had used returns from follow-up questionnaires to prepare detailed summaries or studies of their graduates or dropouts. Only 10 of the 50 institutions reported that such information had been an important factor in decisions to institute, revise or discontinue a technical or vocational course. Examples of curricula which had been adjusted as result of follow-up information included machine shop, auto mechanics, mechanical drafting, agricultural technology, electronics, and textile manufacturing. In at least one case, it was reported that an ineffective instructor was replaced as result of follow-up information.

During interviews, several administrators stated they considered appraisals received from employers of graduates to be of more significance

than information received from the graduate, and that they endeavored to get opinions and suggestions from employers whenever practicable. However, no institution reported a regular program in which written requests for evaluation of former students were being addressed to employers.

Job Placement and Follow-up Inquiries: Discussion

Placement of graduates obviously is a minor problem in North Carolina at the present time, except in areas where not much industrial development has taken place and where out-migration is regarded as inevitable by many young persons. Although the Director of Student Personnel usually serves as placement officer, instructors with whom vocational and technical students are associated play an important role in bringing their students into contact with employers. Infrequent use of ESC employment services for job placement are indications both of strong demands for well-trained workers and the general shortage of workers in the overheated economy which existed during the study period.

Efforts to follow-up graduates must be adjudged less than satisfactory in most institutions, and not very beneficial in many others, mainly because the resulting information seldom has been used in strengthening or adjusting programs. As to strategy in use of follow-up questionnaires, there are bases for several points of view. One may very easily say that each institution ought to acquire employment information about its graduates, but it also should be acknowledged that such efforts require carefully designed research plans which are not likely to be prepared or effectively implemented with the personnel and time available in area schools.

If left to research sponsored by universities, few of the post-secondary schools can expect to be chosen for detailed study. Furthermore, there is little likelihood that publication of results will be timely for immediate management use or that the data will have general application to other institutions which are faced with problems and conditions peculiar to their own service areas.

Regardless of difficulties inherent in contacting graduates who have been gone for some time, the experience in several institutions shows that "exit interviews" can be conducted expeditiously and with certainty that replies will be obtained from all graduates. The resulting data constitutes about as strictly current information as can be obtained regarding trends in occupational employment of trained workers. It can be analyzed and used immediately for evaluation and short-run planning, no matter what type of follow-up inquiries eventually are made.

Area Economic Base Information

The purpose of these questions was to ascertain the extent to which general economic and demographic information had been organized, analyzed, and made readily available for planning. Answers to question 4 in the interview guide provided these responses.

4. (a) Has a detailed summary or economic study concerning population and labor force data, inventory of resources and industries, and similar planning information ever been prepared expressly for the service area of your institution?

Responses	Number of Institutions
yes	26
no	23
no reply	1

(b) If one or more such reports have been developed by your institution or other agency, please indicate when and by what agency or by what staff members they were prepared.

Report Prepared by:	Number of Institutions
President	5
Other staff members	4
ESC office or mobile unit	6
County or area development association	2
County Board of Education	1
Chamber of Commerce	1

(c) Does your institution have on file a recently revised list of employers in your service area, in classified industries?

Responses	
yes	25
no	14
no reply	11

(d) From what sources do you most often receive advance information regarding plans for establishing a new industry in your service area, and indications as to its occupational needs?

Source	Number of Institutions
Chamber of Commerce	28
State Conservation & Development Dept.	8
Industrial Services Division	8
Local ESC Office	8
Directly from the Industry	6
Newspaper Reports	5
Others mentioned once each included a bank, power company, and advisory committee	

Economic Base Information: Discussion

Interview time was inadequate to examine this subject in the depth it deserves. Many respondents demonstrated an intimate knowledge of conditions in their area economy, but there was not much evidence that institutional service areas had been singled out for coordinated study. The greatest need is not for more detailed area economic studies, but for recording of "benchmarks" or summaries of essential information in order that it may be continuously available for staff use. A great deal of economic and demographic information is carried in the heads of the staff and faculty. When a member leaves, most of this fund of knowledge goes with him.

Twenty-six of the 50 institutions reported that an economic study of the area had been prepared, but the studies were not considered conclusive. It is difficult to specify what constitutes a satisfactory study of this nature because there was much doubt in some institutions as to what should be considered the effective service area. In literally all cases, many students who lived in the home county of one institution were attending another technical institute or community college in order to take particular courses, or for various personal reasons.

In about one-half of the institutions which reported economic summaries, they had been prepared by institution personnel, often by the president himself, or by the committees which prepared proposals for establishment or conversion of the institution. In most of the other instances, the studies or summaries were reported to have been made by the Employment Security Commission, the local Chamber of Commerce, or an industrial development agency.

About 75 percent of the institutions stated that lists of employers had been prepared. These were obtained through assistance from the local ESC office in some instances, and in others they were compiled from telephone directories or city directories. Larger industries were so well known that many staff members did not attach much importance to maintaining complete lists of employers in the area.

More than one-half of the institutions stated that Chambers of Commerce were the best source for obtaining advance information concerning location or expansion of industries, and consequently for providing some indications as to training needs. Other sources were area industrial or development agencies. The Industrial Services Division of the Department of Community Colleges; the Conservation and Development Department; and local ESC offices. Only six institutions reported that good advance information was being received directly from the industries. This constituted a major problem which will be discussed in connection with the use of ESC data.

Use of Secondary Data Sources

These results came largely from question 5 which was designed to focus discussion upon use of Employment Security Commission reports, with

particular reference to the specific service area of the institution. Unlike census data, the specification and collection of these data involves considerable coordination between the ESC and state educational agencies.

Interview Question

5. The Employment Security Commission of North Carolina has, from time to time, published studies of job opportunities and training needs, such as "Employment Outlook for Selected Occupations in North Carolina, 1966-1970." In this state, the outlook data are tabulated for seven geographical areas, and each area contains about five or more technical institutes or community colleges. The following questions pertain to the ESC publication referenced above:

   (a) Have these area reports, in the form published, been found to be valuable guides in representing occupational training needs of employers in the counties primarily served by your institution?

Responses	Number of Institutions
yes	25
no	5
value is doubtful	18
not used	2

   (b) Do you think that more specific occupational outlook data or analytical reports than are now available should be provided by ESC or by some other state agency to cover counties served by your institution?

yes	38
no	5
no reply or no opinion	7

   (c) Either in cooperation with the ESC or otherwise, has your institution prepared estimates as to numbers of job opportunities by 1970, or some other future date, by occupations, for the countries primarily served by your institution?

yes	14
no	31
yes, but only on occupations for which training is being offered	2
no response	3

(d) Has a report been compiled for any time period, to list and compare numbers of persons trained in occupational programs by your institution with estimates of overall needs of your service area in comparable occupations?

yes	4
no	42
no reply	4

Summary of Responses

Only 25, or one-half of all institutions indicated that, in the form published, they considered the ESC occupational outlook reports to be valuable guides in representing occupational training needs of the institutional service area.

In 76 percent of the institutions, including those which had found the reports to be useful, respondents stated that more detailed occupational outlook reports would be desirable for separate counties or specific industries in their service areas, rather than as aggregate reports for the state and six multi-county areas. Of the remaining institutions, five preferred to receive reports aggregated for the state and by multi-county area.

Several respondents felt that statewide occupational outlooks should be issued more often than every four years. The subject of cooperation between institutions and the local ESC office was not formally stated as a question during the data collection phase, but comments were made by respondents indicating that relations ranged from excellent to very poor. One institution which had two ESC offices in its service area reported close support from one office but little cooperation from the other. In several instances, directors of student personnel were complimentary of the assistance given by ESC offices in testing student applicants.

Although an occupational outlook report was published for 1970 for the state and six multi-county areas, only 14 institutions reported they had drawn upon that report or other data sources to prepare estimates of job opportunities for their own areas in 1970 or a later date. Several of these estimates were made by types of curricula rather than by coded occupations, or they included only occupational curricula being offered or planned. One respondent represented a position which apparently was prevalent, by saying "we try to determine what curricula we will offer, rather than estimate the number of jobs by occupation."

Very little had been done anywhere to measure the extent to which graduates from an institution had filled manpower needs in the past, probably because there had rarely, if ever, been an authoritative statement of occupational needs for an area. Four institutions indicated that efforts had been made to prepare such a report. One was an institution located in a country which had very little manufacturing, and the others

appeared to have focused attention on only a few occupations. One president observed that such estimates might provide material for publicity, but in his opinion were not of much value otherwise.

Use of Secondary Data Sources: Discussion

An appraisal of results here hinges largely on whether an institution is satisfied to receive occupational outlook data aggregated only for the state and for areas of 15 to 20 counties, in lieu of such data specifically applicable to its service area. About one-half of the institutions considered the outlook data as now compiled for multi-county areas to be valuable and acceptable, while the remainder had doubts or were outspokenly critical. In practically no case had an institution prepared comprehensive estimates of future occupational needs of its specific area, although it had been done in a few cases for the curricula being offered.

There are good reasons, related to survey costs and sampling techniques, and economic and statistical theory, why a state ESC is hesitant to prepare projections of occupational needs in every county, or for every major industry and occupation. Part of this deficiency with respect to local and small area occupational outlooks can be reduced by close cooperation between an institution and its local ESC offices, which receive new occupational information frequently. Strictly current indicators such as unfilled positions or numbers of new workers employed during a given period have not proved to be of much value in forecasting. Nor do employers divulge their future growth plans and occupational needs to the ESC office more willingly or fully than to educators or to economic investigators.

Nevertheless, if an institution does not obtain comprehensive, reliable information as to future occupational needs in the area it serves, either from data collection agencies or through its own survey efforts or both, it cannot very well be expected to be quantitatively specific as to its objectives. Much planning is done with respect to what curricula will be conducted or given priority for initiation, rather than in effort to prepare definite numbers of graduates by occupation. In view of limited specificity with respect to the best available outlook information, and the many alternatives which may be exercised by students and employers for occupational choice and preparation, it is not felt that strong cirticism should be directed to the current efforts of post-secondary program administrators.

Collection and Development of Planning Information

These responses were obtained from questions 6, 7 and 8, which were designed mainly to examine the organization, procedures and problems involved in the efforts of institutions to obtain planning information by using their own personnel to survey employers, and to analyze and synthesize the resulting information.

Interview Question

6. (a) Which one of the following statements most nearly reflects the policies of your institution with regards to contacting employers:

(1) All faculty members engaged in technical and vocational training are encouraged to use initiative in contacting or visiting employers to obtain and exchange relevant occupational information;

(2) Such visits are permitted or required only when approved by the program director, or in connection with a planned survey.

Responses:		
	Policy (1)	49
	Policy (2)	1

(b) When an occupational survey is conducted by the institution, which of these methods is usually employed?

(1) Employers are contacted mainly by the instructor most directly concerned with the curriculum, who confines his inquiries to one occupation, or to a few closely related classifications.

(2) Several distinctly different occupations are surveyed at the same time, several staff or faculty members take part, and each makes inquiries from an employer concerning a number of occupations.

(3) Some other general method is used. (Please explain briefly).

Responses:		
	Method (1)	23
	Method (2)	17
	Method (3)	7
	No reply	3

Summary of Responses to Question 6.

Almost without exception, institution presidents have encouraged staff and faculty members to use initiative by visiting manufacturing plants and other employers to obtain and exchange information relevant to the courses they are conducting. This includes information concerning production technologies and skill requirements as well as labor market conditions. One institution reported a standing policy that personnel would visit only those firms to which they had been invited, but in two other institutions rather definite schedules were prepared for visits. In many cases surveys were made that required coordinated efforts involving from several persons to practically all available staff and faculty members.

Twenty-three institutions required the visiting staff or faculty member to seek information only about the occupation or curriculum in which he was concerned, but in 17 cases the visitor was expected to make

inquiries regarding either the firm's overall needs or in several occupations and to relay appropriate information to other faculty and staff members. In general, most of the visits to businesses or plants were made by faculty members in the vocational and technical divisions. However, student personnel directors frequently visited employers as well as schools, and usually were at least as much interested in placement of students and feedbacks of information about graduates, as in posing inquiries about occupational needs.

Interview Question

7. (a) In regard to obtaining demand data for your service area (labor needs of employers), what do you consider the most difficult problems faced, in attempting to obtain satisfactory estimates of current or future occupational requirements? (See summary of responses, below.)

   (b) Will you please state the most important difficulties encountered in estimating the probable supply of qualified students for technical and vocational curricula, and in influencing their application for enrollment? (See summary of responses, below.)

   (c) Approximately how many months have usually elapsed between the date a new technical or vocational curriculum has been proposed and the date on which instruction commenced?

Responses	Number of Institutions
6 months or less	14
6 to 12 months	13
12 to 24 months	9
Over 24 months	4
Indefinite or no response	10

Summary of Responses to Question 7.

Question 7 was designed to develop comments and discussions on problems related to obtaining information as to labor demands of employers on one hand, and problems involving estimating student enrollment on the other. Respondents were not limited in their statements of problems, and it was almost impossible to classify the responses in narrow categories.

In about one-half of the institutions, responses to question 7(a) indicated that the main difficulty in obtaining satisfactory estimates of future occupational needs was placed squarely on employers with whom the staff and faculty had been in contact. Employers often were represented as close mouthed, reluctant, vague or conservative, and more concerned with immediate employment needs than with forecasts that would contribute to realistic planning of occupational training.

The next largest group, eight institutions, indicated that insufficient personnel, time and resources to make the desired contacts constituted the greatest problem in estimating future demand. Six institutions did not answer the question regarding demand, and three stated in effect that they considered no major problem was involved. In all three of these cases, it appeared that their responses were influenced by recent rapid growth, and by prospects that their occupational programs would utilize as much of their resources and facilities as could be made available in the near future.

Approximately twenty other problems or conditions related to estimating occupational demands were stated separately or in connection with one of the major difficulties already noted. These included the lack of overall occupational training objectives for the state; employers who make guesses, rather than estimates seriously based on their plans for plant expansion; a need for better job descriptions or agreement on how to indicate minimum skill levels which are acceptable for the positions in question; employers who are prone to base future estimates on strictly current trends; doubt as to future wage levels; many graduates who must be reconciled to migrating, rather than obtaining jobs in the local industries; getting opinions from advisory committees; and interpreting and analyzing data obtained from employers.

Responses to question (7b) concerning estimates of student supply and enrollment were more diverse than in the question related to estimating future occupational demand. In 10 cases respondents expressed concern for improving the public image of occupational education, to compete with the prestige of higher education institutions. In eight cases, the problem was seen as inability to interest the student in occupational education, or to get high school counselors and other faculty members to put adequate emphasis on these curricula, in comparison with efforts to interest students in attending a four-year college. A great deal of discussion was generated in some interviews concerning measures designed to impress high school counselors and enlist their active support in disseminating program information and enrolling qualified students in occupational education. In addition to visiting high schools, a number of administrators were holding dinner conferences with high school counselors and principals. In several cases, counselors or other high school faculty had been employed to assist in conducting surveys during the summer or holiday periods.

Eight institutions did not reply to the question on student supply estimates. Explicit in seven responses, and implied in several others, the problem stated was the difficulty in getting students to make firm commitments early enough to permit adequate planning by the institution, or even to make a final decision on whether a given course would be offered. There appeared to be no definite pattern to explain decisions of students who applied or enrolled but did not appear when classes were begun. One community college placed the number of applicants who did not enroll as high as 50 percent; another placed the figure at 30 percent of those who had applied and actually paid the initial

enrollment fee would not enroll. Several institutions, mainly the newer ones, stated that lack of historical data or experience in the area was a major problem in projecting or estimating student enrollment.

Other problems related to estimating student supplies and enrollment were: migration and extent to which other areas would draw high school graduates; estimates of the enrollment of men returning from military service and loss of high school graduates to the military; parents' influence, particularly parental bias against occupational education, compared to prestigious college courses; necessity for communicating through mass media and through high school counselors and faculty members instead of direct contacts with all potential students; laxity of high school non-graduates or prospective students whose basic qualifications are doubtful.

During interviews, it was noted that the last-mentioned problem was a particularly vexing one. In all too many instances, a prospective student must be told that he does not have the basic prerequisites in general education to take the curriculum of his choice, and must be encouraged to take training in lesser skills or further prepare himself in basic subjects.

As indicated in question 7(c) effort was made to determine how much time had elapsed between proposing a new curriculum and initiating instruction. These answers are not considered conclusive, because of varying requirements and problems involved in obtaining equipment, facilities and personnel. Responses ranged from three months to as much as three or four years. Twenty-seven institutions indicated that one year or less was necessary. Nine indicated that it required about one to two years, and several qualified their answers upon availability of funds and equipment. Only four institutions felt that they needed two years or longer to develop and offer a new curriculum.

Interview Question

8. (a) In connection with technical and vocational curricula now being offered by your institution, which one of the following statements is most applicable:

   (1) The majority of these curricula were established with reference to occupational needs of firms located near to the institution (the same county or a nearby county).

   (2) Occupational employment prospects in the entire state or nation were considered of equal importance, or greater importance, than local outlook, in establishing most occupational curricula.

Responses	Number of Institutions
(1) in response to local needs	37
(2) state or national employment prospects	13

(b) Has demonstrated interest of prospective students for enrollment in occupational curricula been a more important factor in establishing some particular curricula, than outlook for employment in those occupations in your service area?

Student interest more important	27
Local employment outlook more important	19
Indefinite or no reply	4

Occupations in which student interest was especially important in establishing curricula included practical nursing, business and secretarial courses, welding, cosmetology and drafting.

(c) Please list any examples of occupations which are particularly important in your area economy, but for which curricula have not been established because of low student interest.

Responses	Instances noted
Building trades	21
Textile occupations	9
Furniture design and manufacture	4
Data processing	3
Agriculture technologies	3
Auto repair	3
Chemical technology	2
Forestry	2
Appliance repair	2
Air conditioning	2

Other occupations noted once each included welding, engineering technology, tool and die making, machinist. drafting electronics, management and sales, power sewing, and sheet metal working.

During interviews, a variety of explanations were offered for lack of student interest, but the most important appeared to be that jobs were readily available, without formal training, in the building trades and in factory operative jobs. However, it was stated that occupational status was becoming more important. Many students are not interested in training in "factory" jobs, nor are they willing to devote up to two years to occupational preparation, when most of them can get some kind of job without it. In several cases, administrators were of the opinion that training time would have to be shortened to make some curricula more attractive, even at the expense of graduates not achieving the highest desirable levels of skill.

Collection and Development of Planning Information: Discussion

The most difficult aspect of information management is the assembly

and interpretation of outlook data indicative of area training needs, by specific occupations. While some of the information may be derived from national trends, ESC reports and similar agency assistance, few institutions can expect to have satisfactory local data for planning unless they collect or verify most of it themselves. Every institution engages in some kind of survey activities, and also comes into possession of miscellaneous data which could provide valuable planning guides. However, this data is not being accumulated systematically or fully utilized.

Time allocated by post-secondary administrators towards surveying needs of area employers, determining availability and interests of potential students, and the staff work to analyze and utilize economic information in curriculum planning probably is very great, in relation to time spent on these tasks in senior colleges, or even in secondary schools. Insofar as these activities constitute parts of an information system, there are few staff or faculty members who are not active participants.

Personal efforts by individuals to obtain first-hand information usually have borne fruit. The most obvious criticism was made previously in connection with management of basic area economic information, much of it is carried in the head and not reduced to written reports, analyses and benchmarks. "Formal" surveys were not often undertaken by an institution, and there is much latitude in what constitutes a "survey". Almost any type of inquiry was likely to be called a survey,--even a few phone calls.

Estimating future occupational demands within the institutional service area was reported as a major problem. This merely echoes one of the conditions familiar to all occupational educators,--employers often cannot or will not make their labor demands known sufficiently in advance to permit adequate training programs to be developed. A consequence may be considerable gaps between supply and demand in many skills. But, in fairness to employers, no one should infer that labor imbalances are always due to their lack of foresight or candor. Many economic considerations, including rapid technological advances, changing consumer preferences, governmental policies and private investment decisions can contribute to an employers inability to estimate future occupational demands.

One of the significant patterns in post-secondary planning is a broadening of the occupational horizon as an institution is developed. Initially, the curricula offered are closely related to occupational needs of local industries, especially those which have been influential in establishing the institution. As the institution grows, and particularly as technical curricula are developed, demands in more distant areas gain added importance, if for no other reason than student interest in occupations for which there may be little prospect for local employment. The engineering technologies are a good example.

Most of the problems noted in connection with occupational demand and outlook have a bearing on setting long-run training objectives, and

a direct impact on short-run efforts to initiate new curricula. For small institutions, the curricula conducted are bound to be limited in number and will not attract some students who might enroll if a broader variety of offerings was available. As an institution grows, more skills can be incorporated, but the tasks of long-range planning still are very difficult, insofar as quantitative needs by specific occupations are concerned.

The other side of the coin in planning is estimating prospective student supplies. This is not the supply of experienced workers which confronts labor demand in the well-known labor supply-demand context, but the supply of students interested in enrolling in some phase of the institutions' occupational program. Numbers and occupational interests of prosepctive students may be very different from the numbers and qualifications of workers required for businesses and industries located in the institution's service area. Many potential students want jobs immediately and may choose to migrate from the area before receiving any post-secondary education, and military service expectations influence many decisions. Aspirations of students for a college education, and the influence of their parents and counselors towards this end were frequently mentioned.

It appears certain that student interest has been a strong factor in determining what occupational curricula could be established. This influence may increase even more in the future, and must be acknowledged in all planning. Already, very few institutions are able to enroll students in the building trades, while other curricula like cosmetology and practical nursing have generated much interest and many applications.

Although systems concepts and models have provided a convenient approach to study planning and operational problems, there is some danger that organizational aspects of information management may be overemphasized. It is concluded that identical organization and duty assignments of personnel in regards to information exchange would not be desirable in every institution, even among institutions of approximately the same size. This is true in part because service areas may be quite different in economic and demographic characteristics and would present distinctive problems in connection with either obtaining or disseminating information. Also the qualifications, interests and personalities of presidents and of staff and faculty members are bound to vary from institution to institution. No two presidents will see fit to organize and have their staffs operate in exactly the same manner. Considerable flexibility is essential in duty assignments and in procedures.

Advisory Committees

Question 10 in the interview guide was devoted to Advisory Committees, and was designed to bring out the frequency of use and general value of these committees to institutions.

Interview Question

10. The following questions pertain to advisory committees:

(a) Advisory committees have been formed in case of

(1) All technical and vocational curricula;
(2) Some of these curricula;
(3) None of these curricula.

Responses	Number of Institutions
All curricula	32
Some curricula	14
No curricula	2
No response	2

(b) Where advisory committees have been formed:

(1) They are active in initiating suggestions and providing information;
(2) They provide advice only when specifically requested;
(3) They have not been very effective in helping the program.

Active	29
Upon request	13
Not effective	1
No reply	2

(c) Where advisory committees have been formed, in what occupations have they been of most assistance?

	Instances Noted
Auto mechanic	11
Nursing	10
Business technologies	7
Cosmetology	6
Building trades	6
Welding	5
Medical laboratory technology	4
Civil engineering technology	4
Furniture design	4

Curricula noted in one or two instances included: industrial engineering technology, accounting, sanitary engineering technology, air conditioning, agriculture, textile technology, food processing, hotel management, data processing, electronics, architectural engineering technology, photography, and dental technology.

Six institutions indicated that all advisory committees had been helpful, but that they did not feel justified in ranking them.

Advisory Committees: Discussion

The results indicated that advisory committees had been helpful in various ways, but the record of their use by institutions in North Carolina is somewhat spotty, with less than two-thirds having formed these committees in all occupational curricula.

There are several comprehensive studies and manuals on the organization of advisory committees, and only a few points need to be made here. The most important consideration is that they can provide direct communication with an occupational field in business or industry, with an ease and certainty that is almost unmatched elsewhere. They should be given special attention in developing new curricula, and in new institutions, where their formation can be very important in furthering community relations.

A Model of Information Flows

This subject was introduced in Question 12 in the interview guide, for the purpose of generating a broad discussion of the model presented and discussed in Chapter II.

Interview Question

12. Attached is a diagram showing some of the main flows of information related to technical and vocational programs (fiscal matters, facilities, instructional aspects, and routine internal administration are largely omitted). Will you please comment as to whether this model is generally applicable to your institution. Indicate if any important organizational elements or channels of communication are not shown, or if any of the flows represented on the diagram should be deleted.

Responses and Discussion

Comments by respondents indicated that they were not much interested in "model building" and only about one-half of them cared to discuss the subject in much detail. Most of the reporting institutions said that the model was "adequate," "realistic" or "applicable." Several commented that it was too complicated, while others felt that more details of information flows within departments in the institution should be shown. One respondent felt that direct contacts between the Director of Student Personnel and the local ESC office should be more specifically portrayed, and another made the same comment with reference to contacts between members of advisory committees and faculty members who plan to conduct vocational and technical courses.

This model of information flows is, in fact, about as detailed as can be portrayed on a single page, but shows only a small part of the internal information exchange contacts. Each element is a "black box," within which flows are not depicted, although much discussion elsewhere in the study has been devoted to transactions within the elements or subsystems shown in the model.

For example, any box or subsystem, such as that representing the Director of Study Personnel, could be expanded and portrayed as a separate model, for this division maintains or executes many contacts with graduates, enrolled students, prospective students, student applicants, secondary schools, ESC offices and other agencies, employers, the institution president and other staff and faculty members. Within the student personnel division itself there are many information transfers, related to students' applications, records, testing, counseling, course completion, exit interviews, or follow-up questionnaires. The more one examines these administrative functions, the more the inquiry becomes a general study of management and administrative operations rather than one of information exchange.

The interviews were not designed to bring out detailed statistics as to frequency of transactions, the loads on each element or individual, or an accounting for time spent in each type of operation. Quantitative measurements would have to be undertaken in a more formal operations analysis approach. This might become desirable as a preliminary step towards centralizing some of these functions at the state level, or expansion of computer services within the overall system.

Interviews with Presidents: Results and Discussion

This was a rewarding phase of the data collection, and it provided insights and materials for study of several subjects which extend beyond the scope of this project. Presidents were interviewed in 44 of the 50 institutions. The principal discussions were directed to identifying major information exchange problems and to the feasibility of centralizing more of an institution's information management efforts into a specialized center which would help to acquire, analyze and disseminate planning and programming information.

The nucleus of such a center was suggested as one or more specially qualified staff members who would augment present capabilities for obtaining and disseminating relevant information, and who would conduct action-oriented research, analysis, preliminary planning and evaluation of occupational curricula. This proposition was considered feasible and desirable in all except five instances, but many of the respondents qualified their approval by reiterating that additional funds would have to be provided. Several presidents noted that they had made a start towards such an arrangement, with reference to the information management functions assigned either to an administrative assistant or to their Director of Student Personnel. In at least 10 institutions, Presidents indicated they would place high priority on developing such a unit, provided sufficient funds were available and qualified personnel

could be secured. Many also indicated they would cooperate in an experimental program of this nature.

Nearly all of the larger institutions, including most of the community colleges, were in favor of attempts to develop a centralized information management element. One community college would not give it high priority because it considered the ESC should be required to do more towards providing appropriate information. Another community college president favored the concept, but insisted that it should be developed along area lines with each center serving several institutions.

The majority of presidents strongly favored development of a better overall information management organization and would cooperate with exemplary programs. In general, they ascribed lagging developments in this direction to rapid growth, limited funds, personnel shortages and the high priority they place upon using available funds for obtaining well-qualified instructors. Several pointed out that nearly all of the staff and faculty already are involved in various aspects of information acquisition, dissemination, analysis and planning, but the press of duties often prevented preparation of written studies or recording matters on which essential information had been presented at staff conferences.

All of the principal alternatives or parallel improvements suggested are worthy of close consideration. These included establishment of area centers to support and coordinate survey and planning activities among several institutions; improvement of supporting services from the Employment Security Commission; provision of survey teams from the Department of Community Colleges; and more reliance on contract surveys and consultants. All of these measures, except possibly the local decisions on use of consultants, would require policy decisions at state or higher levels, and necessitate increased interagency coordination.

The Presidents were closely in agreement with responses from other staff members as to major problems, one of the most pressing being to obtain resources necessary for continued growth and to effectively implement the input of qualified students. They expressed less concern with setting quantitative program objectives or with evaluating economic benefits of their programs, than in satisfying themselves that appropriate occupational curricula were conducted and that the instruction was of high quality. In general, they considered collection of dependable data as to future local occupational training needs to be the most important information exchange problem.

General Discussion

Several matters involving availability or exchange of occupational information have not been accorded topical status, or have been given limited treatment, but are worthy of consideration in a general discussion, prior to presenting recommendations.

One of these is program appraisal or evaluation. The discussion of follow-up inquiries points out the desirability for a more comprehensive economic evaluation of program results. An initial approach is to examine institutional objectives. Even though selected objectives may prove to be unattainable, there is no firm basis for an evaluation of results unless training objectives and evaluative criteria have been stated. This has not been done quantitatively for occupations in the State by the Department of Community Colleges. However, the Department has contracted with the Research Triangle Institute for development of a strategic plan for the system. A partial basis for this plan is projections of employment by occupation to 1980 both by counties and by multi-county planning areas. Availability of this information should be very beneficial to the institutions in setting their enrollment and training objectives, but cannot completely obviate the need for direct contacts with employers and prospective students in their service areas.

Within institutions, objectives have been set mainly in terms of overall growth in enrollment. Objectives by occupation usually have been stated quantitative only where there is reasonable assurance that an existing curriculum can be continued in successful operation, or where facilities and equipment are being procured which require justification in terms of members of students to be served.

The institutions are subjected periodically to comprehensive evaluations of their program processes, especially those involving instruction. These inspections, conducted by committees composed of department staff and experienced personnel from other institutions are somewhat limited in scope but appear to be thorough and informative. However, evaluations of program results have seldom been attempted and much available data that could be used for this purpose are not being assembled or published.

For example, annual enrollment reports are published by the Department but they do not contain information concerning numbers of graduates, either by institution or by specified curricula or programs. Without this information, and without some quantitative approximation as to the annual occupational training requirements, worthwhile conclusions cannot be drawn about how effectively the institutions are contributing to filling overall training needs.

About three-fourths of the schools had instituted formal procedures to follow-up their graduates by mailing questionnaires concerning employment, but only 15 institutions reported that the replies had been tabulated or analyzed. Thus, it must be concluded that one of the most important sources of data for program evaluation and redirection is being neglected.

Inasmuch as it will not be discussed subsequently in this report, it should be noted here that there are distinctive information and planning needs for college transfer programs and for general adult extension programs. These subjects have been excluded from detailed consideration in this study because the focus has been upon education for skills.

Although directors are provided in institutions for the college transfer programs and general adult programs, and although neither program is designed as a terminal, skill-oriented operation, they are conducted within the framework of post-secondary institutions, and inevitably require considerable planning and management effort by the president and other staff members.

Several conclusions may be drawn from the interview comments in reference to college transfer and general adult programs. With regard to the former, it is almost universally agreed that attainment of community college status enhances the prestige of an institution and facilitates recruiting for vocational and technical curricula, as well as providing college credit courses. The interviews gave no evidence of serious competition for resources between the college level programs and the remainder of the programs, although this cannot be discounted as a potential problem.

Except for the Director of Adult Education, there is now relatively little contact between an institution's full time staff and adult education students. Most of these persons attend classes held at night at schools in their community and are instructed by public school teachers employed part time for this purpose. The information exchange aspects in regard to skill training become important when the students have advanced enough to have minimum qualifications for enrolling in an occupational curriculum or extension course.

Many presidents expressed concern about the admittedly great numbers of persons who need adult basic education, and the urgency for preparing them to take more specific training in work-related skills. It was concluded that not much input into full time vocational and technical curricula can be expected from this category of severely disadvantaged students, but that capabilities should be expanded for providing guidance, counseling and occupational advice, and bringing them into appropriate occupational extension courses, if not the full time vocational and technical curricula.

SUMMARY AND RECOMMENDATIONS

Problems

The principal information problems in occupational education stem from a combination of conditions that are well recognized. Cost and benefit data now available are not adequate for meaningful analysis or determining priorities for initiating courses. Secondary data such as 1960 Census reports soon are outdated. National level statistics from federal agencies or even statistics from statewide surveys are seriously deficient for direct application to local programs. Institutions are forced to use administrative and teaching personnel to collect locally much of the information essential for planning and adjusting their occupational programs, and this was seen as the major information problem by most directors interviewed. Effective implementation of planning requires thorough dissemination of program information, concerted efforts to identify, contact, advise and enroll prospective students, and efforts to secure the cooperation of employers.

Evaluation

It is concluded that growth of enrollment in most institutions of the N. C. Department of Community Colleges has been commendable and that this growth has been both a result of effective information dissemination activities and a cause of some problems associated with evaluation and redirection of programs.

In terms of numbers to be trained in specific occupations, training objectives have been loosely stated and seldom quantified either at state or local levels. Likewise, numbers and qualifications of graduates and dropouts and their employment experiences generally have not been analyzed or evaluated with respect to their contributions towards equilibrating labor demands in an institutional service area or other areas.

Some of the strongest and weakest aspects of information management and planning are attributable to agency organization and policies rather than to methodological capabilities of the disciplines that could be brought to bear. The delegation of broad operational authority to institutions was fortuitous, and has helped to insure political acceptance, reduce the incidence of state - local controversies, and permitted administrators to exercise initiative for successful local operation.

This institutional autonomy has lessened somewhat the urgency for exchanging information from state to local levels and for providing coordination and guidance from state level that would have been required under more strongly centralized control. Much help is provided by the Department in connection with instructional matters, but most curricula are established through the initiative of institutional administrators and staff.

However, it should not be concluded that an open door policy insures either an adequate or an increasing input of students, nor that vesting institutions with a large measure of autonomy will permit all problems of information collection, analysis and curriculum planning to be relegated to an institutional level. There is urgent need for research into state-level management problems, for determination and periodic reappraisal of statewide occupational needs and objectives, and coordination between institutions and with other agencies on a much broader scale than is evident at present.

Recommendations

1. A State-Level Research and Information Management Division. The foremost recommendation is that a staff element be established in the Department of Community Colleges for the express purpose of conducting occupationally-oriented research, providing staff analysis and coordinating information flow and management among the institutions. This suggestion is made because it does not appear that current organization and staffing of the Department is adequate for this task, nor that any agency located outside of the Department can be expected to be sufficiently responsive to the growing data and analytical needs either of the Department staff or the 50 or more institutions.

It is believed that such a staff group would operate most effectively as a separate division, available to all divisions and institutions in the system for advice and technical support. It would be an analytical and consultative unit, and would not be charged with compiling routine statistical reports. There is considerable doubt as to whether a survey team should be established at state level, as suggested in several institutions, but a Research and Information Management Division should include at least one specialist who could advise and assist institutions in designing their own surveys and in analyzing results.

2. Dissemination Activities. Recruiting should receive high priority at institutional level and should be recognized as an essential function which requires no apology. Staff members other than the Director of Student Personnel and his assistants also should be given assignments related to program information dissemination and recruiting, insofar as these duties do not interfere with their teaching.

"Recruiting" as discussed here implies personal contacts with prospective students, with the objective of bringing them into the post-secondary program in an appropriate course or curriculum. Effecting participation of students should be accorded higher priority than influencing their selection of a particular curriculum, but they should have full information and guidance regarding alternatives open to them in post-secondary education.

Each institution, in addition to visits by its staff to high schools, should operate a regular program in which selected secondary

school faculty members, especially counselors, are invited to be present for group discussions regarding the institution's post-secondary programs. Preferably, these should be dinners or meetings which combine some social activity, and great care should be taken to make the occasions informative and stimulating.

3. Follow-up Inquiries. Follow-up procedures present one of the greatest challenges for improvement, because so little of the information potentially available from former students is being obtained and used for program adjustment or evaluative purposes.

Several specific suggestions are presented in regard to follow-ups. Standard questionnaires should be developed for use by all institutions, designed so that replies from employers and former students could be readily transferred to punch cards for electronic data processing. This tabulation could be done rapidly and economically at a central location, providing a fund of information that could be analyzed for many purposes.

In addition to administering follow-up questionnaires, have every student who enters a full-time curriculum execute an "exit interview" or questionnaire shortly before graduating or dropping out. This form also should be standard for the entire state. It need not be as detailed as the follow-up form, but should reveal information as to location and exact nature of anticipated employment; entry wage level; how the job was obtained; expectations for further participation in training programs; military service status and outlook; and other pertinent information. If dropouts cannot be interviewed before leaving, a staff or faculty member should fill in the best available information in order that a record can be maintained of all students who entered the curriculum.

4. Economic Base Information. The 1970 decennial census will provide exceptional opportunities for badly needed updating of economic and social information pertaining to the service areas of institutions. It is recommended that maximum advantage be taken of these new data, when available. Appropriate extracts applicable to the counties and cities in service areas should be prepared for use in analyzing and representing conditions affecting occupational training needs and prospects. The library of every institution should contain the U. S. Summary and all volumes pertaining to North Carolina.

5. Secondary Data Sources. It is recommended that full cooperation be given to Employment Security Commission efforts in regard to employment and manpower development but that outlook data obtained from that source, or from any single research or development agency, be considered as only a part of the overall fund of information to be analyzed for planning and decision-making. There is a regrettable lack of specificity in almost any routinely reported occupational outlook data either for representing numbers of persons who should be trained, or indicating proportions of projected total occupational demands which should be filled through post-secondary occupational programs.

6. Collection of Planning Information. Although the broad outlines of population characteristics for an area may be obtained from the Census, and much industrial employment data and occupational outlook information may be obtained from ESC reports, it has become generally recognized that representatives of institutions must visit local sources to collect adequate planning information. It is recommended that institutional plans for collecting primary information of this nature be predicated upon having the Director of Student Personnel and his assistants obtain relevant data from public school systems in the area, while the Director of Instruction and faculty members concerned with vocational and technical programs provide principal contact with employers.

This is the general way in which most of the institutions now are obtaining primary information. Applicable criticisms and recommendations for changes are based not so much upon organization as upon inadequate personnel and incomplete recording. It is a difficult undertaking for faculty members to prepare and conduct instruction and also to personally visit large numbers of industries. It is less difficult to contact schools but in both cases surveys and continued liaison with outside sources requires much time and effort.

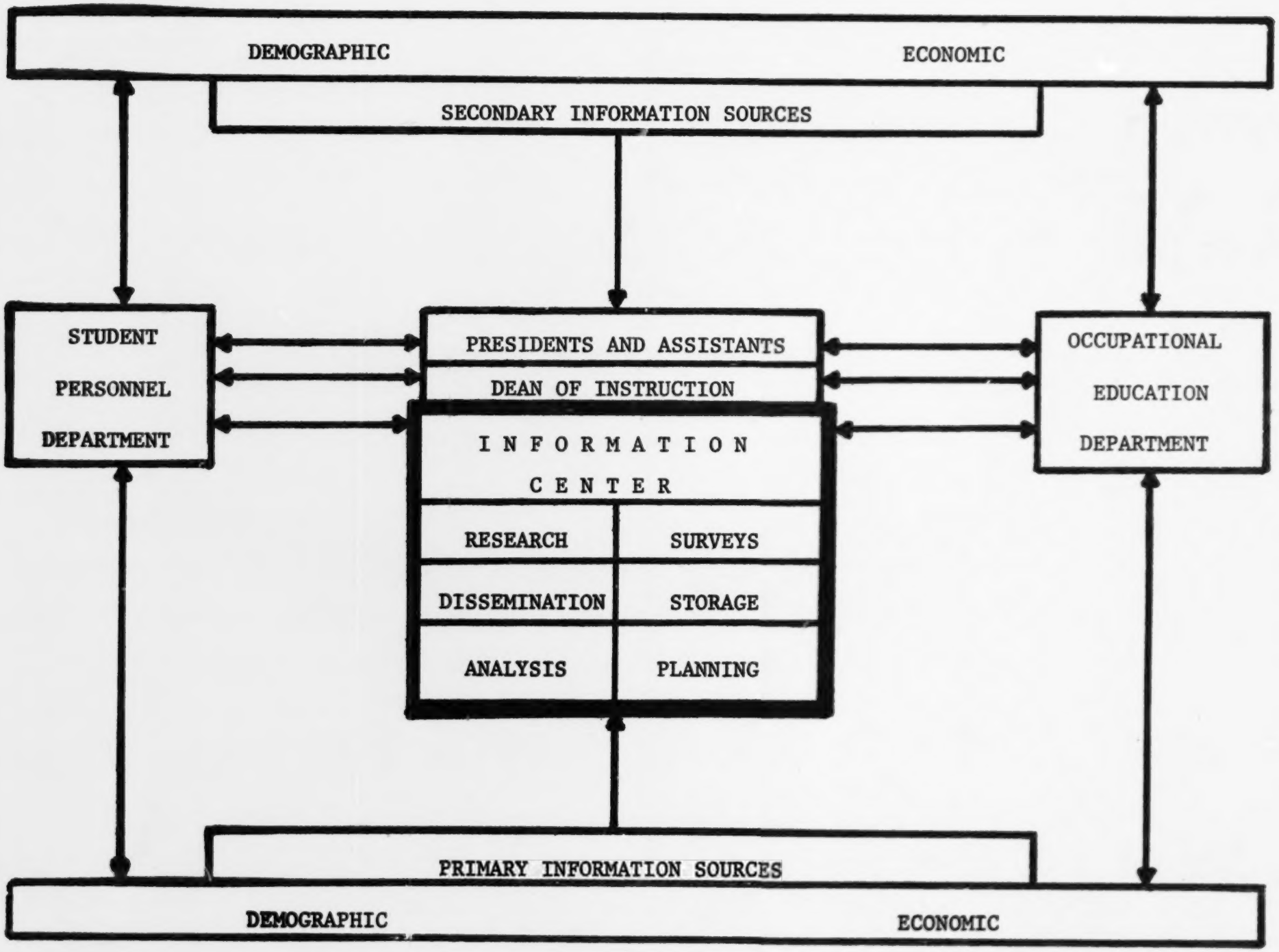
Continuation of the present general methods is suggested mainly because there appears to be no likelihood that institutions will acquire enough resources to employ full-time, specialized personnel for all data collecting. However, there are distinct advantages in having faculty members visit industries in the service area. In so doing they become personally aware of conditions under which their graduates will be employed, and make contacts that may be helpful in developing curricula and placing graduates, in following up their progress, and evaluating their training.

7. A Research and Information Center in Institutions. The proposal to centralize and coordinate local information management by establishing a specialized staff section in institutions for this purpose was well received by most of the presidents, and it is recommended that efforts be made to implement and test such a center. The research and analysis it undertakes would be directly related to the institution's programs. The center would help to plan and conduct surveys but is not intended to reduce the initiative or responsibilities of staff and faculty for making contacts with employers, schools, or other agencies that are essential to their planning and operations.

It is suggested that the unit be set up in the beginning under direction of an administrative assistant to the president for research and information management. Initially, it might consist of only one person with some clerical support. It must be emphasized that his duties would not be to supplant existing channels of communication nor to take over primary duties of other staff members in connection with data accumulation, keeping their own records or information dissemination. He would, however, institute and test

FIGURE 9

MODEL FOR AN INFORMATION CENTER IN AN INSTITUTION



NOTE: OTHER DEPARTMENTS WITHIN THE INSTITUTION ARE NOT SHOWN HERE.

procedures for keeping abreast of developments in all institutional program areas. This would necessitate a workable system whereby all staff and faculty would forward appropriate information. The section would devise forms for recording it.

As in the case of other institutional activities, presidents would have much latitude in developing a flexible and effective local research unit. A model for suggested organization and operation of an institutional information center is presented in Figure 9.

8. Computer Services. Not much discussion was developed in this study with regard to detailed use of electronic processing devices in the institutional information exchange systems, and there has been relatively little testing of computerized procedures against real user needs. However, the potential of computers for serving occupational planners and administrators is great, and it is recommended that in all planning connected with expansion of computer use, an express objective be to make these services more readily available to institutions.

9. Training in Information Management. It is recommended that firm provisions be made for providing specialized inservice training for all staff and faculty who occupy key positions in information exchange. At the institutional level, training would be of particular interest to student personnel directors, counselors, public information officers, and heads of departments. Intern programs should contain provisions for specialized training to enable these persons to know and use all available information sources.

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